

# Delineation of Waters of the United States for Lawrence Livermore National Laboratory, Site 300

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October 2, 2006

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This work was performed under the auspices of the U.S. Department of Energy by University of California, Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.

## Delineation of Waters of the United States for Lawrence Livermore National Laboratory, Site 300

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# **Executive Summary**

This report presents the results of a delineation of waters of the United States, including wetlands, for Lawrence Livermore National Laboratory's Site 300 in Alameda and San Joaquin Counties, California. Jones & Stokes mapped vegetation at Site 300 in August, 2001, using Global Positioning System (GPS) data recorders to collect point locations and to record linear features and map unit polygons. We identified wetlands boundaries in the field on the basis of the plant community present. We returned to collect additional information on wetland soils on July 3, 2002. Forty-six wetlands were identified, with a total area of 3.482 hectares (8.605 acres). The wetlands include vernal pools, freshwater seeps, and seasonal ponds. Wetlands appearing to meet the criteria for federal jurisdictional total 1.776 hectares (4.388 acres). A delineation map is presented and a table is provided with information on the type, size, characteristic plant species of each wetland, and a preliminary jurisdictional assessment).

# Delineation of Waters of the United States for Lawrence Livermore National Laboratory, Site 300

### Introduction

This report presents the results of a delineation of waters of the United States, including wetlands, for Lawrence Livermore National Laboratory's (LLNL's) Site 300 in Alameda and San Joaquin Counties, California. The purpose of this study was to identify and characterize wetlands occurring on the site that may be subject to federal jurisdiction and regulation under Section 404 of the Clean Water Act.

# **Project Location and Description**

Site 300 occupies approximately 2,800 hectares (7,000 acres) straddling the border between Alameda and San Joaquin Counties, approximately 24 kilometers southeast of the City of Livermore (Figure 1). Site 300 is a U. S. Department of Energy experimental test site operated by the University of California and is used primarily for high explosives testing (U.S. Department of Energy and University of California 1992). Test facilities located on the site include remote firing areas, storage magazines, and a chemistry processing area. Administrative facilities include a fire station, medical services, a cafeteria, maintenance and storage buildings, security facilities, offices, wastewater facilities, and roads that occur primarily in the southern half of the property. A controlled burning program has been carried out annually on Site 300 since 1960, primarily in the northern half of the site and perimeter areas. Numerous unpaved fire roads traverse the site.

## **Environmental Setting**

### Vegetation

The vegetation at Site 300 was mapped during two separate studies in 1986 (BioSystems 1986) and 2001 (Jones & Stokes 2002). In addition, wetlands were

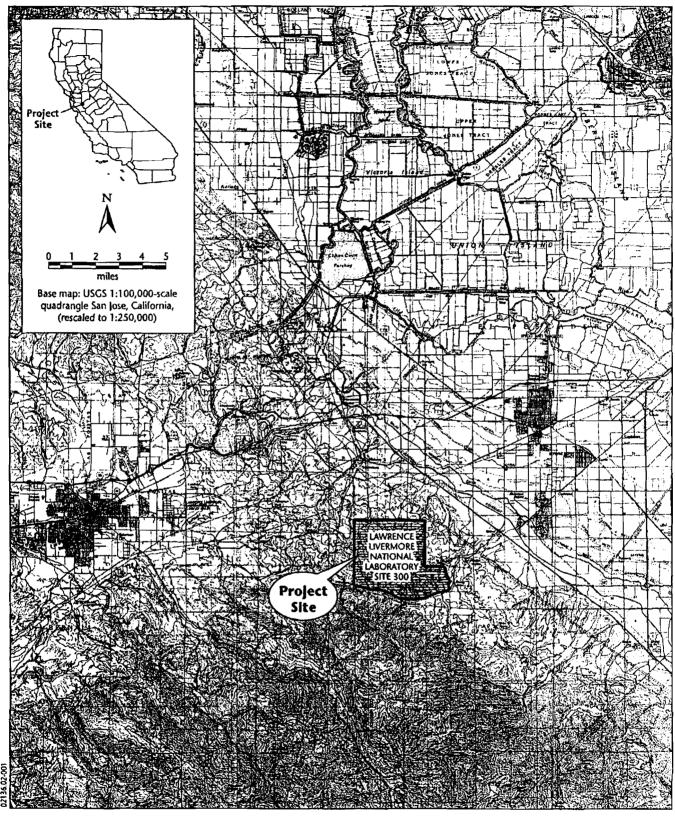


Figure 1
Site 300 Location, Lawrence Livermore
National Laboratory, Alameda/San Joaquin County, California

mapped at Site 300 in 1991 (U. S. Department of Energy and University of California 1992).

The vegetation at Site 300 primarily consists of grassland, both native grassland and California annual grassland. Stands of coastal scrub and woodland are scattered across the site, mostly in the southern half. Riparian vegetation is present along Corral Hollow Creek, where the creek crosses the southeastern corner of the property, and along some of the drainages that traverse Site 300, mostly from north to south. Within the developed facilities, areas are either disturbed (paved, occupied by buildings, or otherwise cleared of vegetation) or landscaped with ornamental trees and shrubs.

Grasslands are present in all portions of Site 300. Most of the grassland consists of California annual grassland, a community dominated by annual grasses that were introduced from Mediterranean Europe during the Spanish colonial era, including wild oats, brome grasses, and annual fescues. Native grassland is a community dominated by native grasses, primarily one-sided bluegrass and needlegrass.

Coastal scrub is a shrub-dominated community occurring in the Coast Ranges in areas influenced by a maritime climate. Most of the coastal scrub at Site 300 is a sparse scrub that occurs in rocky areas with shallow soils and dominated by California matchweed. Coastal scrub types at Site 300 with higher shrub cover include California sagebrush scrub, in which California sagebrush is the dominant shrub, and California sagebrush-black sage scrub, in which California sagebrush and black sage are both dominant species. A few other small areas of scrub are dominated by bush lupine and poison oak.

Woodlands at Site 300 consist primarily of small stands of blue oak woodland, valley oak woodland, or California juniper woodland. In blue oak woodland, blue oak is the dominant canopy species, and the understory is dominated by annual grasses. Juniper-oak cismontane woodland is dominated by California juniper and blue oak. Two stands of valley oak woodlands are present. There, valley oak is the dominant species, and Fremont cottonwood and red willow are present in the canopy. California juniper woodland and scrub includes areas dominated by California juniper with a shrubby understory of coastal scrub species.

A few small stands of riparian woodland are present at Site 300. Fremont cottonwood riparian woodland occurs along Corral Hollow Creek in the ecological reserve at the southeast corner of Site 300. The dominant species is Fremont cottonwood. The shrubby understory is open to dense, consisting primarily of mulefat and red willow. Riparian scrub is present along sections of stream channel along Elk Ravine dominated by willows and along small sections of other drainages dominated by mulefat.

In the previous wetland study (U. S. Department of Energy and University of California 1992), sixteen wetlands or wetland complexes were mapped and characterized by the vegetation and hydrology present. These wetlands were reported to be generally isolated and scattered across Site 300. Vernal pools occur in the northwest corner of the site. Freshwater seeps occur in the bottoms

of stream channels and on hillsides. Seeps with a perennial water source are dominated by cattails. A few seasonal ponds are present. These are areas that are seasonally inundated but do not have native wetland or vernal pool vegetation. The vegetation is sparse and consists of weedy wetland or ruderal species.

#### Soils

Site 300 consists primarily of steep mountainous terrain. Slope gradients typically range from 5% or less in alluvial valleys to 75% or greater on surrounding hill slopes.

Soils at Site 300 have been mapped and described by the U.S. Soil Conservation Service during its survey of the Alameda area and San Joaquin County (Welch et al. 1966, McEliney 1992). The general soil map compiled by McEliney indicates that the Calla-Carbona-Wisflat association is the dominant soil association on the San Joaquin County portion of Site 300. The Calla-Carbona-Wisflat Association is characterized by well-drained, moderately coarse textured and moderately fine textured soils formed from mixed alluvium and weathered sandstone bedrock. The Alameda County portion of Site 300 is mapped as the Vallecitos-Parish Association, which is characterized by well-drained to excessively drained, moderately coarse textured, shallow to deep soils formed from hard sandstone and shale (Welch et al. 1966).

## **Hydrology**

Site 300 is an arid site with no perennial streams or perennial water bodies, although perennial seeps and springs are present. Most of the wetlands are supported by groundwater springs and seeps. Some of the wetlands were originally created by releases of cooling tower surface water and are currently maintained with potable water. Vernal pools receive and collect rainfall.

### Methods

Wetlands were delineated using the routine onsite determination procedure described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). Although the study site is larger than 5 acres, the routine determination procedure was used, rather than the comprehensive determination procedure, because the areas of potential wetlands were small and widely scattered across the site. Sampling along regular transects would not have been an effective or efficient means for determining wetland boundaries.

During the vegetation mapping study conducted by Jones & Stokes in August 2001, field surveys were done to characterize the vegetation types and verify the map unit boundaries. The wetlands identified during the previous 1991 study were visited to verify their presence and to remap their boundaries. Additional

wetlands were identified by consulting with LLNL wildlife biologists familiar with Site 300 and by walking transects along the canyons. To delineate more accurately the wetlands, Global Positioning System (GPS) data recorders were used to collect point locations and to record linear features and map unit polygons. Wetlands boundaries were identified in the field on the basis of the plant community present. Areas of hydrophytic vegetation, composed of green, growing perennials, were readily differentiated from the adjacent upland vegetation composed of brown, dried annual grasses.

Additional information on wetland soils was collected on July 3, 2002. Because of the overall similarity of wetlands at Site 300, only a limited number of representative sample points were examined. At each data point, paired soil pits were excavated, one on the wetland side of the wetland boundary, the other on the upland side of the boundary. A shallow soil pit was excavated by hand to compare soil characteristics with the mapped units and to determine whether soils exhibited redoximorphic features. Data from each sample point were recorded on standard data forms, which are included as Appendix A.

Geographic Information System (GIS) files were created from field delineated maps, GPS data, and field notes. The map units delineated on aerial photographs were digitized in AutoCAD R14. The GPS data were differentially corrected and the topology was cleaned up for positional errors.

#### **Problem Areas**

Specific problems encountered during the delineation included absence of wetland hydrology, probably due to the summer timing of the field surveys. Many of the fire trails at Site 300 are impassible during the rainy season, and regular maintenance of the fire trails does not occur until late May or June. Wetland hydrology in the vernal pools is seasonal, with water present only during the rainy season. Wetland hydrology in many of the seeps also appears to be seasonal, with reduced or no water flow during the summer months. These areas were delineated primarily on the basis of the vegetation.

### **Results and Discussion**

Forty-six wetlands were identified during this study, with a total area of 3.482 hectares (8.605 acres). Wetlands appearing to meet the criteria for federal jurisdictional total 1.776 hectares (4.388 acres). The delineation is shown in Figures 2 and 3. The wetlands include vernal pools, freshwater seeps, and seasonal ponds. Table 1 provides information on the type, size, characteristic plant species of each wetland, and a preliminary jurisdictional assessment.

The previous delineation (U. S. Department of Energy and University of California 1992) identified 2.74 hectares (6.76 acres) of wetlands at Site 300, including 2.35 hectares (5.80 acres) of herbaceous wetlands, 0.26 hectare (0.64).

Table 1. Characteristics of Site 300 Wetlands

	_			Jurisdictional	Jurisdictiona
etland	Туре	Characteristic Species	Acreage	Assessment	Acreage
1	vernal pool	Crypsis schoenoides, Gnapahalium palustre, Amaranthus albus, Polypogon monspeliensis, Epilobium cleistogamum	0.597	RLF breeding site	0.597
2	vernal pool	Plagiobothrys stipitatus, Deschampsia danthonioides, Epilobium cleistogamum, Eleocharis macrostachya	0.325	RLF breeding site	0.325
3	vernal pool	Hordeum marinum ssp. gussoneanum, Polypogon monspeliensis	0.018	Isolated	
		Vernal pool acreage, subtotal	0.94		0.922
4	freshwater seep		0.199	Tributary	0.199
5	freshwater seep	Baccharis salicifolius, Leymus triticoides	0.017	Tributary	0.017
6	freshwater seep	Leymus triticoides	0.054	RLF non-breeding site	0.054
7	freshwater scep	Polypogon monspeliensis, Leymus triticoides, Typha angustifolia	0.101	Tributary, RLF breeding site	0.101
8	freshwater seep	Utica dioica, Polypogon onspeliensis, Typha angustifolia	0.023	Isolated	
9	freshwater seep	Urtica dioica	0.033	Isolated	
10	freshwater seep	Typha angustifolia, Distichlis spicata	0.443	Isolated	
11	freshwater seep	Typha angustifolia, Polypogon monspeliensis	0.025	Isolated	
		Typha angustifolia, Stachys albens, Distichlis spicata, Leymus triticoides, Baccharis		Tributary, RLF breeding & non-	
12	freshwater seep	salicifolius, Urtica urens	1.141	breeding sites	1.141
13	freshwater seep	Urtica dioica	0.099	Isolated	

Table 1. Characteristics of Site 300 Wetlands

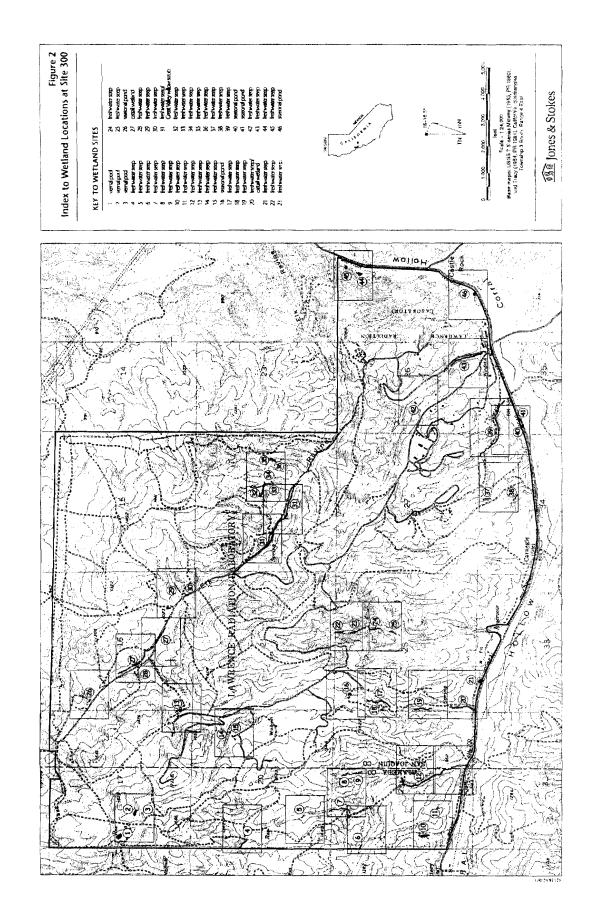
Wetland	Туре	Characteristic Species	Астеаде	Junsdictional	Jurisdictional Acreage
14	freshwater seep		0.008	Artificial	
15	freshwater seep		0.013	Artificial	
17	freshwater seep	Leymus triticoides, Baccharis salicifolius	0.217	RLF nonbreeding site	0.217
81	freshwater seep	Typha angustifolia, Leymus triticoides	0.078	Isolated	
19	freshwater seep	Baccharis salicifolius, Leymus triticoides	0.111	Isolated	
20	freshwater seep	Typha angustifolia, Baccharis salicifolius, Leymus triticoides, Salix laevigata, Populus fremontii	689.0	RLF non-breeding site	0.689
21	freshwater seep	Typha angustifolia, Baccharis salicifolius, Leymus triticoides, Nicotiana glauca	0.288	Isolated	
22	freshwater seep	Typha angustifolia, Stachys albems, Leymus triticoides	0.147	Isolated	
23	freshwater seep	Typha angustifolia, Stachys albens, Leymus triticoides	0.118	Lsolated	
24	freshwater seep	Typha angustifolia, Leymus triticoides	0.082	Isolated	
25	freshwater seep	Typha angustifolia, Leymus triticoides	0.026	Isolated	
27	freshwater seep	Typha angustifolia, T. latifolia	0.575	Artificial, RLF breeding sites	
28	freshwater seep	Salix laevigata, Typha angustifolia, Uritica dioica, Nasturium officinale	0.056	Isolated	
29	freshwater seep	Typha angustifolia, Polypogon monspeliensis	0.031	Artificial	
30	freshwater seep	Polypogon monspeliensis, Baccharis salicifolius	0.043	Artificial	

Table 1. Characteristics of Site 300 Wetlands

Wetland	Туре	Characteristic Species	Acreage	Assessment	Jurisdictional Acreage
31	freshwater seep/Great Valley willow scrub	Typha angusutifolia/latifolia, Urtica dioica, Salix laevigata, Nasturtium officinale	0.774	RLF non-breeding site	0.774
32	freshwater seep	Typha angustifolia, Urtica dioica, Leymus triticoides	0.076	Isolated	
33	freshwater seep	Typha angustifolia, Urtica dioica, Leymus triticoides	0.029	Isolated	
<b>%</b>	freshwater seep	Typha angustifolia, Urtica dioica, Leymus triticoides	0.018	Isolated	
35	freshwater seep	Utica dioica, Marrubium vulgare	0.046	Isolated	
36	freshwater seep	Utica dioica, Marrubium vulgare, Polypogon monspeliensis, Typha angustifolia, Cyperus eragrostis	0.048	Isolated	
37	freshwater seep	Baccharis salicifolius, Polypogon monspeliensis, Typha angustfolia	0.071	Isolated	
38	freshwater seep	Leymus triticoides, Typha angustifolia, Polypogon monspeliensis	0.034	Isolated	
39	freshwater seep	Typha angustifolia, Urtica dioica, Potypogon monspeliensis, Xanthium strumarium, Leymus triticoides	0.498	Isolated	
42	freshwater seep	Typha angustifolia, Polypogon monspeliensis, Rumex crispus, Asclepias fascicularis, Carduus pycnocephalus	0.036	Isolated	
43	freshwater seep	Typha angustifolia, Salix laevigata, Polypogon monspeliensis, Baccharis salicifolius, Leymus triticoides	0.492	Isolated	
4	freshwater seep	Typha angustifolia, Leymus triticoides, Distichlis spicata	0.266	Isolated	

Table 1. Characteristics of Site 300 Wetlands

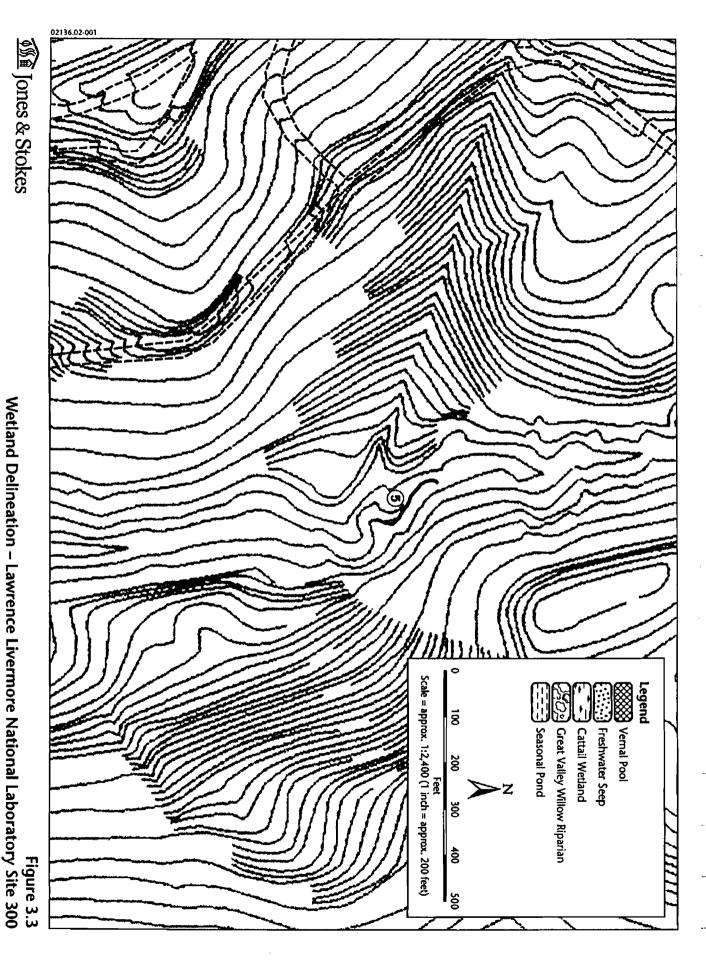
Wetland	Туре	Characteristic Species	Acreage	Jurisdictional Assessment	Jurisdictional Acreage
45	freshwater seep	Leymus triticoides, Juncus balticus	0.153	Isolated	
		Freshwater seep, subtotal	7.158		3.192
16	seasonal pond	Conyza canadensis, Leymus triticoides, Baccharis salicifolius	0.094	Isolated	
26	seasonal pond	Polypogon monspeliensis	0.018	RLF nonbreeding site	0.018
40	seasonal pond	bare	0.029	RLF breeding site	0.029
41	seasonal pond	bare	0.139	Isolated	
<b>4</b>	seasonal pond	Lepidium latifolium, Heliotropium curassavicum (sparse vegetation)	0.227	RLF breeding site	0.227
		Seasonal pond, subtotal	0.507		0.274
		Wetlands, Total	8.605		4.388

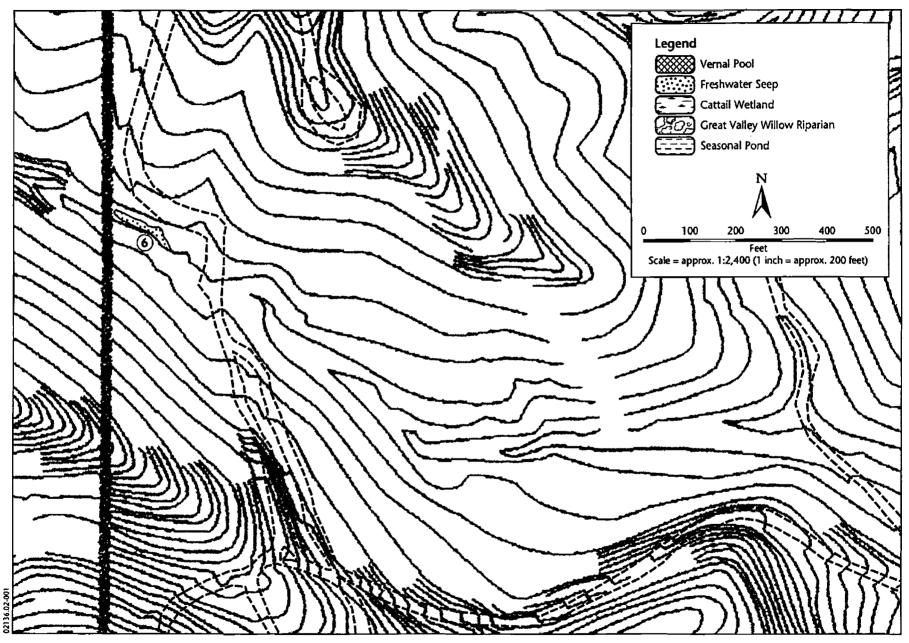


Wetland Delineation - Lawrence Livermore National Laboratory Site 300

Figure 3.2 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

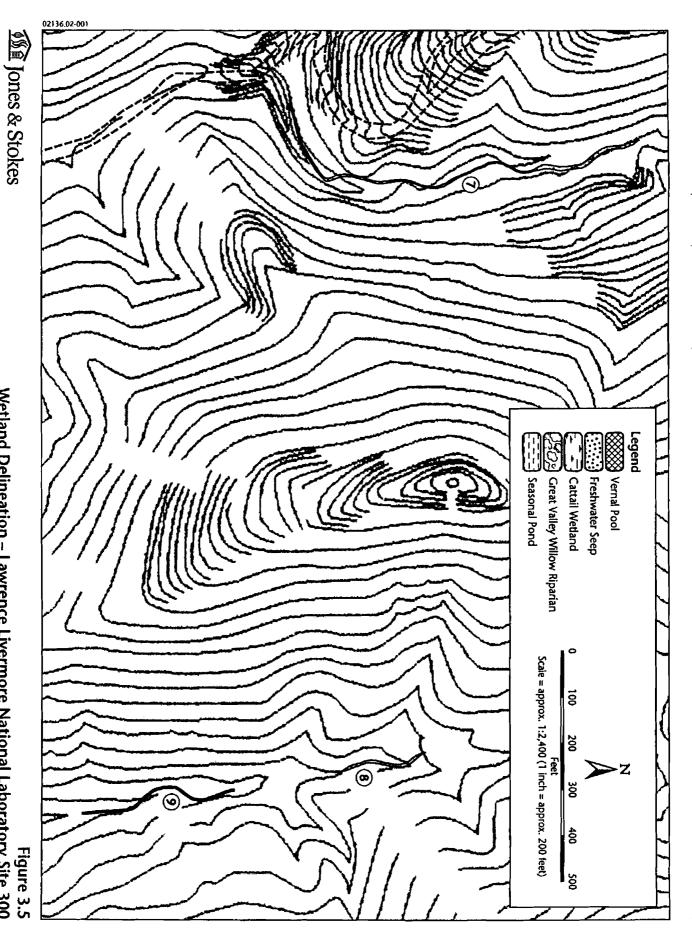
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Figure 3.4 Wetland Delineation – Lawrence Livermore National Laboratory Site 300



Wetland Delineation - Lawrence Livermore National Laboratory Site 300

Figure 3.6 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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Wetland Delineation - Lawrence Livermore National Laboratory Site 300

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Wetland Delineation - Lawrence Livermore National Laboratory Site 300 Figure 3.8

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Figure 3.9 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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Figure 3.10 Wetland Delineation - Lawrence Livermore National Laboratory Site 300

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Wetland Delineation - Lawrence Livermore National Laboratory Site 300 Figure 3.11

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Figure 3.12 Wetland Delineation - Lawrence Livermore National Laboratory Site 300

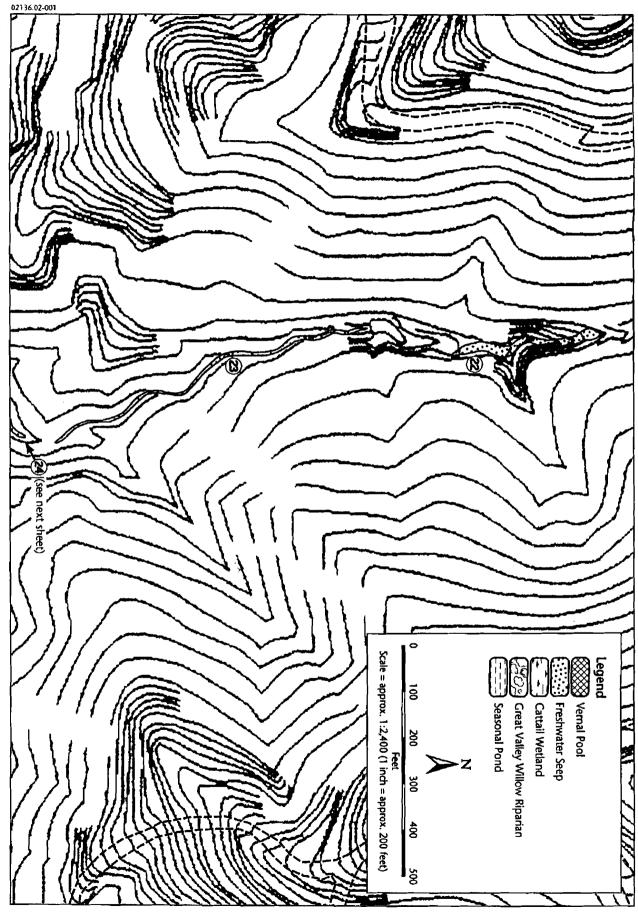
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Figure 3.13 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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Figure 3.14 Wetland Delineation - Lawrence Livermore National Laboratory Site 300

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Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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Figure 3.15

Figure 3.16 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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Wetland Delineation – Lawrence Livermore National Laboratory Site 300 Figure 3.17

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Wetland Delineation - Lawrence Livermore National Laboratory Site 300

Figure 3.18

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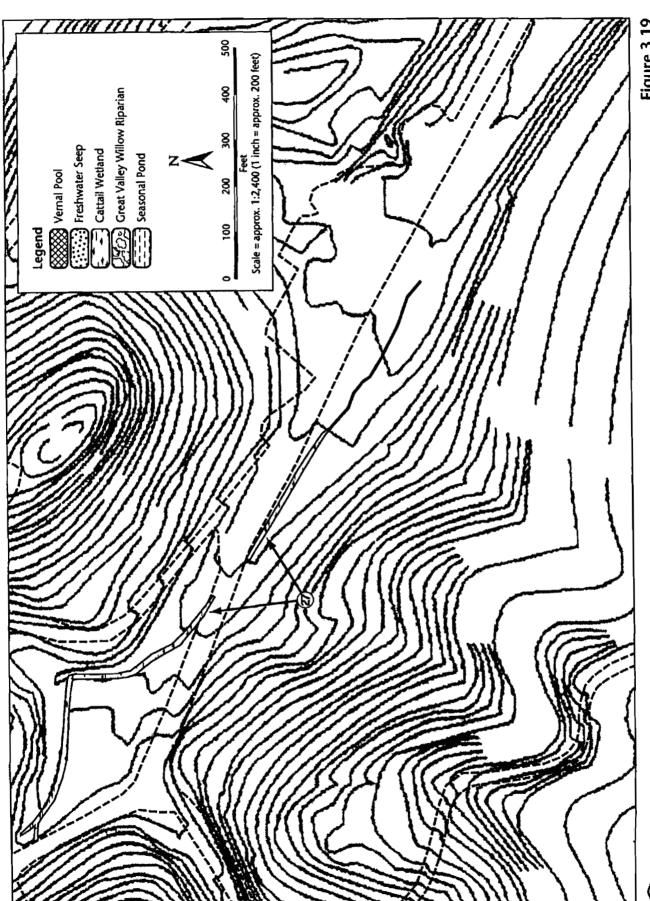


Figure 3.19 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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Figure 3.20 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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Wetland Delineation - Lawrence Livermore National Laboratory Site 300

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Figure 3.22 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

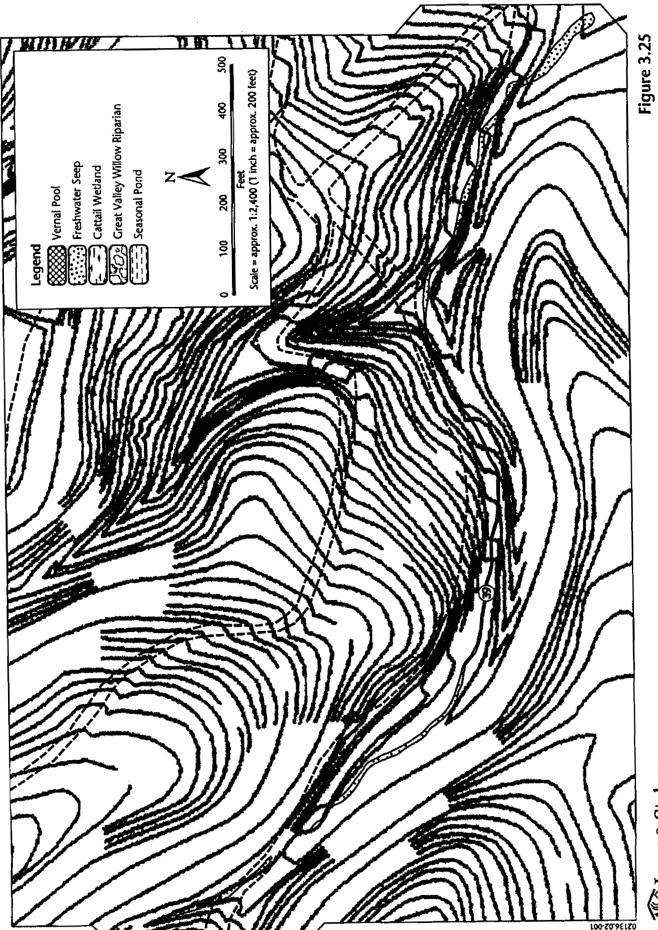
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Figure 3.23 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

Wetland Delineation - Lawrence Livermore National Laboratory Site 300 **Figure 3.24** 

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Wetland Delineation – Lawrence Livermore National Laboratory Site 300

Figure 3.26 Wetland Delineation - Lawrence Livermore National Laboratory Site 300

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Figure 3.27 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

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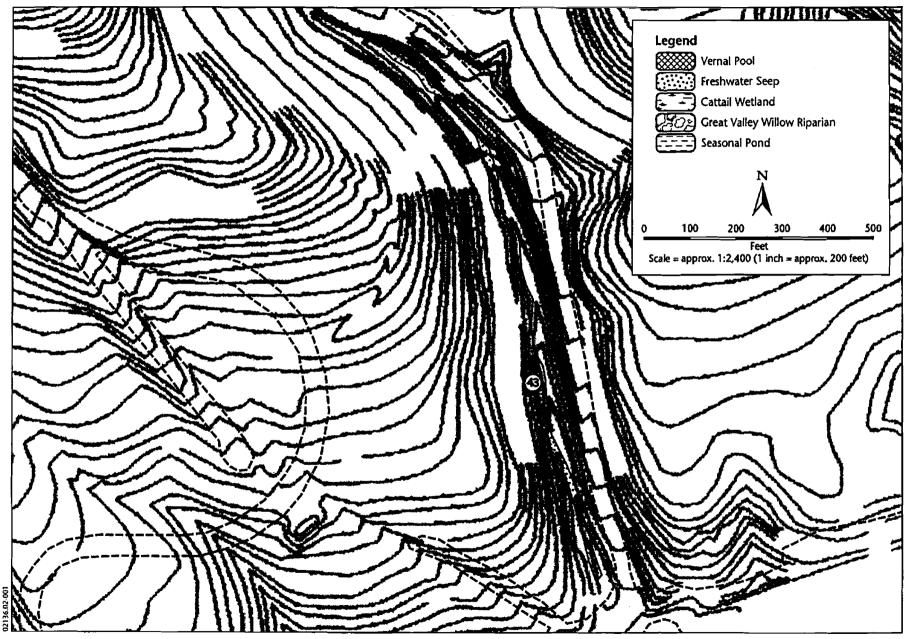


Figure 3.28 Wetland Delineation – Lawrence Livermore National Laboratory Site 300

Wetland Delineation - Lawrence Livermore National Laboratory Site 300

Wetland Delineation - Lawrence Livermore National Laboratory Site 300

acre) of woody riparian wetland, and 0.13 hectare (0.32 acre) of vernal pool wetland. Of these wetlands, 0.76 hectares (1.88 acres) were characterized as artificial. Most of these wetlands are still present and were delineated in 2001. An artificial wetland that was mapped near Building 827 and that was supported by cooling tower water, is no longer present. Some of the areas mapped as creeping ryegrass-dominated wetlands, such as one near the pistol range, no longer exhibit wetland characteristics. Many wetlands were mapped in 2001 that were not mapped in the previous delineation, including the larger vernal pool (Wetland 1) and many small wetlands supported by seeps. The greater number of wetlands delineated in the present study probably reflects a greater familiarity with Site 300 developed by LLNL wildlife biologists since the previous delineation.

A description of the wetland types present at Site 300 is presented below. The scientific names and wetland indicator status of plant species mentioned in the text are provided in Table 2.

#### **Vernal Pools**

#### Vegetation

Vernal pools provide habitat for numerous endemic plant species and are known for their colorful spring floral displays. Vernal pools at Site 300 are not typical and do not fit any of the current vernal pool classifications (e.g., Sawyer and Keeler-Wolf 1995). Unlike typical vernal pools, in which many of the species are endemic to vernal pool habitats, the three vernal pools at Site 300 (Wetlands 1–3) have vegetation composed mostly of wetland generalists that are often found in but not restricted to vernal pools, including stipitate-popcorn flower, annual hair grass, cleistogamous spike-primrose, and creeping spikerush. The dominant plants in the vernal pools are usually or almost always found in wetlands. The smaller pool appears to have a much shorter period of inundation, as Mediterranean barley is the dominant species. Therefore, vernal pools meet the hydrophytic vegetation criterion.

#### Soils

The vernal pools at Site 300 are located in small basins where the soils are mapped as Diablo clay, 30-45% slopes (McEliney 1992). The texture, structure, and low chroma matrix of the soil at data point 2A are characteristics of the Diablo clay soil, which is a well-drained, non-hydric Vertisol. However, when considered in conjunction with the topography and landscape position of the vernal pool features, the low matrix chroma was considered sufficient to qualify the soil at data point 2A as hydric. The soil matrix at data point 2B also has a low chroma, but was determined to be hydric based primarily on the presence of redoximorphic iron-oxide concentrations (i.e., mottles) in the surface horizon.

Common Name	Scientific Name	Wetland Indicator Statu
White amaranth	Amaranthus albus	FACU
California sagebrush	Artemisia californica	
Narrow-leaved milkweed	Asclepias fascicularis	FAC
Slender wild oat	Avena barbata	***
Wild oat	Avena fatua	
Ripgut brome	B. diandrus	***
Red brome	B. madritensis subsp. rubens	
Mulefat	Baccharis salicifolius	FACW
Soft chess	Bromus hordeaceus	FACU
Italian thistle	Carduus pycnocephalus	
Horseweed	Conyza canadensis	FAC
Swamp timothy	Crypsis schoenoides	OBL
Umbrella sedge	Cyperus eragrostis	FACW
Annual hairgrass	Deschampsia danthonioides	FACW
Saltgrass	Distichlis spicata	FACW
Creeping spikerush	Eleocharis macrostachya	OBL
Cleistogamous spike-primrose	Epilobium cleistogamum	OBL
Marsh cudweed	Gnaphalium palustre	FACW
California matchweed	Gutierrezia californica	TACW
Salt heliotrope	Heliotropium curassavicum	OBL
Foxtail barley	Hordeum murinum subsp. leporinum	NI
Baltic rush	Juncus balticus	OBL
California juniper	Juniperus californicus	OBL
Perennial peppercress	-	FACW
Creeping wildrye	Lepidium latifolium	FAC+
Bush lupine	Leymus triticoides	
Horehound	Lupinus albifrons	FAC
	Marrubium vulgare	
Nodding needlegrass	Nassella cernua	
Needlegrass Watercress	Nassella pulchra	ODI
· ·	Nasturtium officinale	OBL
Tree tobacco	Nicotiana glauca	FAC
Stipitate popcorn-flower	Plagiobothrys stipitatus	OBL
One-sided bluegrass	Poa secunda	
Annual rabbit's-foot grass	Polypogon monspeliensis	FACW+
Fremont cottonwood	Populus fremontii	FACW
Blue oak	Quercus douglasii	
Valley oak	Quercus lobata	FAC
Curly dock	Rumex crispus	FACW-
Red willow	Salix laevigata	[FACW+]
Black sage	Salvia mellifera	
White hedgenettle	Stachys albens	OBL
Poison oak	Toxicodendron diversilobum	
Narrow-leaved cattail	Typha angustifolia	OBL
Broad-leaved cattail	Typha latifolia	OBL
Hoary nettle	Urtica dioica	FACW
Foxtail fescue	Vulpia bromoides	FACW
Rattail fescue	Vulpia myuros	FACU
Common cocklebur	Xanthium strumarium	FAC+

### Hydrology

Wetland hydrology in vernal pools is dependent on rainfall. Vernal pools typically are inundated for 4–12 weeks. However, berms have been constructed at the outlet end of each vernal pool at Site 300, an action which has resulted in deeper water and a longer period of inundation. The two larger pools (Wetlands 1 and 2) are inundated for a period sufficient for the breeding of California tiger salamander; the larger pool remains inundated long enough to provide breeding habitat for California red-legged frog (Jones & Stokes 2001). The longer inundation regime is likely responsible for the prevalence of wetland generalist plants, rather than vernal pool endemics. The smaller pool (Wetland 3), which occurs where a swale was bermed by a fire trail, appears to have a shorter period of inundation, because the vegetation is less hydrophytic.

#### Seasonal Ponds

Seasonal ponds at Site 300 have seasonal wetland hydrology, similar to vernal pools, but vernal pool endemics and wetland generalist species characteristic of vernal pools are absent. These seasonal pools are Wetlands 16, 26, 40, 41, and 46. Vegetation in the seasonal ponds is absent to sparse and is composed of ruderal hydrophytic species, including annual rabbit's-foot grass, horsewood, perennial peppercress, and salt heliotrope. Wetland hydrology in the seasonal ponds is dependent on rainfall. Two of the seasonal ponds (Wetlands 16 and 26) were formed where fire trails bermed swales. Wetland 46 was originally constructed as an overflow pond for the sewage treatment facility, but now ponds independently. Wetlands 40 and 46 are inundated for a period sufficient for the breeding of California red-legged frog (Jones & Stokes 2001). Soils in these wetlands were not investigated but were presumed to be hydric on the basis of an aquic moisture regime present during the rainy season.

### Freshwater Seeps and Springs

#### Vegetation

Vegetation in the freshwater seeps is generally dominated by herbaceous perennial hydrophytes, although riparian scrub is also associated with seeps at several locations. Where perennial soil moisture is present, the dominant species is usually narrow-leaved cattail, although broad-leaved cattail is also present. Other common species in the seeps include creeping wildrye, hoary nettle, saltgrass, Baltic rush, white hedgenettle, and annual rabbit's-foot grass. Woody vegetation is associated with freshwater seeps in some areas. Red willows are present along Wetland 31, in Elk Ravine. Scattered Fremont cottonwood and willows are present along the downstream portion of Wetland 20, and valley oak and Fremont cottonwood are present adjacent to the upstream end of Wetland 12. Mulcfat is present at scattered locations in seeps that occur along the bottoms of drainages.

#### Soils

Information on soils in seeps was collected at four sites (Data Points 1A, 1C, 3A, 4A, 4C, and 5B). Soils in seeps at Site 300 consist of sandy loams, silt loams, clay loams, silty clay loams, and clays that frequently contain accumulations of carbonate salts below the surface soil horizon. Soils in seep wetlands were determined to be hydric based on the presence of gleyed or low chroma matrix colors and the presence of redoximorphic iron-oxide concentrations (i.e., mottles).

Soils at Data Points 4A and 4C were problematic. Although soils at these points exhibited no hydric soil indicators, the points were placed where the vegetation was clearly hydrophytic and either in a stream channel (4A) or in a hillside swale (4C). A possible explanation for the absence of redoximorphic features may be that water flows primarily above ground at these locations and remains relatively well oxygenated.

#### **Hydrology**

Wetland hydrology in many of the wetlands at Site 300 is provided by natural seeps and springs that occur where water-bearing sandstone crops out in the canyon bottoms. Other seeps are associated with superficial slope failures or "slumps" induced in part by excess moisture where the water-bearing bedrock is near the surface. Most of these wetlands are confined to small areas immediately adjacent to the seeps. Flows at the seeps appear to vary throughout the year; some seeps were dry during our surveys, and others exhibited saturated soils in only part of the seep.

In contrast, more extensive wetlands are present where perennial springs provide water for wetlands that extend for a considerable distance downstream from the spring source. Perennial springs are present in portions of Wetlands 4, 7, 12, 28, and 31. Wetland 12 is supported by a spring that flows from an abandoned mine shaft. The spring at Wetland 28 was exposed during excavation of sediments and bedrock during construction of a facility in a small canyon at that location. The spring at Wetland 31 in Elk Ravine is a natural groundwater spring that occurs where the bed of the stream channel intercepts a groundwater aquifer.

### **Uplands**

### Vegetation

Uplands adjacent to the wetlands consist of annual grassland dominated by oats and brome grasses.

#### Soils

Information on soils in uplands adjacent to wetlands was collected at Data Points 1B, 3B, 4B, and 5A. Upland soils located adjacent to vernal pools and seep wetlands at Site 300 consisted of silt loams, sandy loams, and clays that were found to be non-hydric based on topography, landscape position, and the absence of hydric soil indicators.

#### Hydrology

No evidence of wetland hydrology was found outside of the vernal pools and seeps. Annual grasslands are usually not inundated and have saturated soils only for short periods during or immediately following rainfall. This period of saturation is not sufficiently long to inhibit the growth of upland species or to promote the growth of plants adapted to grow under saturated soil conditions.

### **Jurisdictional Assessment**

This section provides an assessment of the aquatic habitats that may be subject to regulation by the U.S. Army Corps of Engineers (USACE). USACE regulates many wetlands, streams, and water bodies. It generally regulates wetlands that cross state boundaries, that have an interstate or foreign commerce connection, that are adjacent to regulated waters, or that are habitat for endangered species. It may make a non-jurisdictional determination for wetlands that are isolated, that lack an interstate or foreign commerce connection, or that are artificial. Such artificial features include nontidal drainage and irrigation ditches excavated on dry land or artificial lakes created by excavating and/or diking dry land to collect and retain water and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.

Almost all of the wetlands on Site 300 appear to be isolated. The streams at Site 300 are ephemeral, and most lack an ordinary high water mark. Only Corral Hollow Creek, an intermittent stream that crosses the southeastern edge of Site 300 in the Ecological Reserve, possesses an ordinary high water mark. Water typically is present in the channels only after storms or where seeps and springs are present. Most of the streams lack a channel confluent with Corral Hollow Creek; stream flows drain into the soil before reaching the end of the channels. Only Elk Ravine and the unnamed stream in the western portion of the site have channels confluent with Corral Hollow Creek. Wetlands in Elk Ravine (Wetland 31) are supported by a perennial spring, but stream flows sufficient to reach Corral Hollow Creek do not ordinarily occur. The unnamed stream in the west side of Site 300 has a well-defined bed and banks, but stream flow primarily occurs in Wetland 12, which is supported by a perennial spring. Therefore, only Wetlands 4, 5, 7, and 12 appear to be associated with a stream tributary to a regulated water.

Wetlands 1, 40, and 46, and portions of Wetlands 7, 12, and 27 are known breeding sites for California red-legged frog, which is listed under the federal Endangered Species Act as threatened (Jones & Stokes 2001). Wetlands 2, 4, 20, and 26, and portions of Wetlands 12, 17, and 31 are known nonbreeding sites for California red-legged frog (Jones & Stokes 2001).

Several wetlands at Site 300 are artificial. Wetland 27 was originally created by releases of cooling tower water at Building 865 and is currently maintained with potable water. Wetlands 14 and 15 appear to be maintained by runoff from Building 825, and wetlands 29 and 30 appear to be maintained by runoff from Building 801. These wetlands would likely not persist if their artificial water source was discontinued. Wetlands 3, 16, and 26 were formed by impoundment of water in swales behind berms created by fire trails. These wetlands would likely persist as long as the berms remain intact. Wetland 46 was excavated on dry land to retain wastewater overflow. This pond persists as a seasonal pond, although it is no longer used for wastewater retention.

Table 1 indicates which wetlands may be subject to USACE regulation. This assessment is preliminary and subject to verification by USACE, which may make jurisdictional determinations on a case-by-case basis.

#### References

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# Appendix A Data Forms

Project/Site:					State:	CA			**
Applicant/Owner:	US DOE		<u> </u>		County:	San Joaquin		Kir-farmini h	
nvestigator(s):	Preston & Frazie	<u>r</u>			S/T/R			range in the state of the state	75 1841 2 4 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Investigator(s):	Preston & Frazie	r	arii edilla	- 1. 11	S/T/R				
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_ ,,	servation of Plant Spe		a in Areas of			Other (explain be			
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SUILS					<del></del>		<u></u>	Plot ID:
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axonomy (su	bgroup):	See remarks	below		Field observa	tions confirm man	oed type?	☐YES ☑NO
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		a riyunc inclus	iuttr	LINU				
Advision   Content   Con								
Majo Unit Name (series and phase): Waitlack-dourus-Saw Tamolayo combies, 50-75%, alogose: Drainage Class: wall to somewhatic excessively drained.  Tawonomy (subgroup): See remarks below: Field observations confirm mapped type?   VtS   NO    Profile Description  Reduction (inches): Tawkurp Stocking Immiss): Stockure Immiss): See, Centrate Type, Noction Color (motes)  Aud 9-10: 981   50pt; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%; 100-75%;								
	<b>.</b>			1	1			
Under-	•	Tautura	Ctm.mt.um			Time lecution	Colon (major)	Othan
		A PER CHARGE CONTROL OF THE		STATE OF THE STATE		t type, location		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	***************************************		The second second		A R. C. L. marches and Manner of			
	- 10 29	1 -	B10.0004	2.5101	Jione		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	<del></del>		<del>1 </del>		1			
ydric Soll Inc	dicators (chec	ck all that appl	y):				• • •	
		: Histosol			Mn or Fe	Concretions or No	dules	
,		Histic Epiped	ion	A 44 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	High Org	anic Content in Su	rface Layer of S	andy Soils
		Sulfidic Odo	r	o a santa Zaglasari	Organic :	Streaking In Sandy	Solls	
				A 11 15	Listed on	National/Local Hy	dric Soils List	
					Other (ex	(plain below)		
:	<u>_</u>			Mr. Grant				
:	<u> </u>	Matrix Chror	na <2 with Redo	The state of the s		ons		
Hydric Soil	s Present?			YES ☑NG	v.			
ETI ANO O	STEPLINA	ATION :	ang Lipung Melikang Propinsi Store (1976) Propinsi Nasa (1994) Lipung Megawang Melikang					AND THE RESERVE OF THE STATE OF
				YES NO		· , · · · · · · · · · · · · · · · · · ·		
Wetland hyd	drology prese	ent?		☐ YES ☑ NO				
-				_ :	Is the sample	ing point within a	wetland?	∏:YES∷ ☑ NO
	Producti			LI IES CINO	10 the damp	ing point thaint a	notana.	1. A-1.25-9 , (1-4 8891.); <u>1</u>
						randi Arthur I Aughr du		
	Textu	re and Rock	Fragment Co	ntent		Redoxim	orphic Feature	e Morphology
						:•		
	nd .		sandy loam			on.		•
•				cb - cobbly	84-			
-	rse sand	-	y ioam			2mm)	_ a - depletion	1
-	and	•	loam	• •			Location	
s - loamy very	fine sand	sc - sandy cla		vst - very stony	3 - coerse	(5–20mm)	mat - soil m	
si - coarse sar · sandy loam - fine sandy id	-	sic - silty clay c - clay		xst - extremely stony	5 - extrem	parse (20-76mm) lely coarse (>76mm)	ped - ped s por - soil po oir - other	
					f - faint d - distinct p - promin		_	

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### <u>∮∭n</u> Jones & Stokes

Applicant/Owner:	US DOE							tala ay jarang	
					County:	CA San Joaquin			
Investigator(s):	Preston & Frazie		Account of the second		SITIR	24.7.239.Lyna (* 12)			
Date:			da hitror CPR.				(1) (1) (1) (1) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4		1
Do normal circumstances Is the site significantly dis to the area a potential pro- (If needed, explain belo	sturbed (atypical situa oblem area?	ution)?	☐ YES ☐ YES ☐ YES	□ no □ no	Community ID: Transect ID: Plot ID:	Slope/seep well 1 (C	and		
VEGETATION				=					
Dominant Plant Species Leymus triticoides		Strata Narb	% Rel. Cover	Indicator FAC+	Associate Plan	t Species	Strata	% Rel. Cover	Indicator
Juncus balticus		herb		OBL					
11			102 24.1						
									10 (day 14)
						30.1 7 . 3.1			
	<u> </u>								
Percent of dominants the		r FAC (exclu	ding FAC-):		100%	· · · · · · · · · · · · · · · · · · ·	etation cover		_ %
Morphologic Physiologic Visual Obs	cies Growing	in Areas of			Personal Knowled Technical Literalu Other (explain bel	re	nal Plant Comm	unities	
Hydrophytic Veget			<b>☑</b> YES	□no		<u> </u>			
HYDROLOGY	:				ana Amerika				
Is it the amuring season?	[] vec	□ no				Make A Make 4			
Is it the growing season?  Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)	∟ NO ···································	5% =		Wetland Hydrol Primary Indic	ators:	ed Upper 12	Inches	
Necuted 2318 (secure	Stream, Lake, or Ti Aenal Photographs Other None Available					Orift Lir	nes ant Deposits	n Wetlands	
Depth to St	urface Water: anding Water in Pit: aturated Soil:	>15	inches inches inches		Secondary Ind	Water-		ala	Inches
Wetland Hydrology	Present?	<del> </del>	☑ YES	□ NO					
Remarks:	in and a second of the second								

OILS						F	Plot ID:
Map Unit Name (serie	s and phase):	Wisflat-Arburua-	San Timoteo complex: 50	)-75% slopes	Drainage Class:	well to some	what excessively drained
•	Frankeri' Frankeri'		Aliatak Hapatakija,		_		
axonomy (subgroup):	Sec remar	ks below		্ৰ Field observa	tions confirm mapp	ed type?	
s data point located w	ithin a hydric incl	บรเดก?	☐YES ☑NO	• •			
Maris Color							
Map Unit Name (series and phase):							
1					edoximorphic reat	ures	
	1	]				J	1
			Matrix Color				
Map Unit Name (series and phase)  Withst-Advances San Timoted complex, 50-76% slopes  Factoring (sebgroup)  See remarks below  Field observations confirm mapped byse?  Freid observations confirm mapped byse.  Freid observations confirm mapped byse.  Freid observations confirm mapped byse.  Freid observations of the mapped byse.  Freid observations of the mapped byse.  Freid observations confirm mapped byse.  Freid observations of the mapped byse.  Freid observations for mapped byse.  Freid observations for mapped byse.  Freid observations confirm mapped byse.  Freid observations for mapped b				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	sicl	massive/1csbk	10Y 3/1 - 10GY 3/1	t, m, p			
		F				i padati.	
1,000,000	afradige been						Carlot Abandan
				11 (4) 32 (6) 32			
ydric Soil Indicators	(check all that ap	ply):					
	Histosol			Mn or Fe	Concretions or No	dules	
	Histic Epip	edon		∷ ∏ High Org	anic Content in Su	rface Layer of S	andy Soils
	Sulfidic Od	lor		Organic S	Streaking in Sandy	Solls	
	Aquic Mois	ture Regime		Listed on	National/Local Hy	dric Soils List	
* *	Reducing	Conditions ( a,a	- dipyridyl test)	Other (ex	plain below)		
		•			•		
::	= '			and/or Depletic	ons		
Hudric Soils Bross		_	AND THE RESIDENCE AND ADDRESS OF THE PARTY O	- 22			E.A.U.
<del></del>	91161			w/ i			
			: 				o de Maria de la composición del composición de la composición del composición de la
			V YES NO				
			CECCA011211114	la tha aanal		allandO	173444 T
<del></del>	<u>.r</u>	_	L-1 YES NO	is the sampl	nig boint mitsin s	wedand?	☐ AFR ☐ NO
	exture and Roc	k Fragment Cor	ntent	Leise Berthaulu jana, Chesure	Redoximo	orphic Feature	Morphology
			Rock Fragments		:0		
	•	ne sandy loam					
					n		
				in - many			
s - loamy coarse sand	scl - sandy o		vcb - very cobbly				
-	-				•	1	
- loamy fine sand	sici - siity cla	-	st - stony	2 - medium		Location	nteiu .
s - loamy very fine sand sl - coarse sandy loam			vst - very stony xst - extremely stony		(5–20mm) parse (20–76mm)	mat - soil mi ped - ped su	
sandy loam	c - clay	,	one only stony		ely coarse (>76mm)	por - soil po	
- fine sandy loam	-					otr - other	
				Contrast		_	
				f - faint d - distinct			
				p - promin			



Project/Site:	LLNL Site 300		i filosofi Santago de la Santago Filosofie de la Santago		State:	CA
Applicant/Owner:	US DOE	ande, Demografie Hermografie			County:	Alameda
Investigator(s):	Preston & Frazie	<u>Circulation</u>			S/T/R	
Date:	07/03/02				<u> </u>	
Do normal circumstances			☑ YES	□ NO	Community ID:	Vernal Pool/Seasonal Wetland
Is the site significantly dis	· • ·	ation)?	L YES	☑ NO	Transect ID:	2
Is the area a potential pro (If needed, explain belo			☑ YES	□ NO	Plot ID:	2A
(I) HODUBU, DADIGHT DOIL	7(4)					
VEGETATION						
Dominant Plant Species	-	Strata	% Rel. Cover	Indicator	T Assessinto Plan	A Canada Strato   9/ Bol Cours   Indicator
Plagiobothrys stipitatus	<u> </u>	herb	% Rel. Cover	OBL	Associate Plan	nt Species Strata % Rel. Cover Indicator
riagiouounys supriarius	<del></del>	HOLU	7576	OUL.		
		k. f.::::::;;ar k::::::::::::::::::::::::::::::::::::		2000		ege of grading communes, and financial and a grad for a commune and a grad and a grad for the communes of the
			g-1			
**************************************				12		
<del> </del>			da, indigaspie Animamani id	A.,	1	
	<del></del>			1	Ter Character States	
					ateria, se patementi	St. B. St. St. St. St. St. St. St. St. St. St
	199		g for a section for a tre			
Percent of dominants the	at are OBL, FACW, o	or FAC (exclu	ding FAC-):			Total vegetation cover%
				_		<del></del>
☐ Morphologi	cal Adaptations				Ø	Personal Knowledge of Regional Plant Communities
	al/Reproductive Adap	ntations			Ō	Technical Literature
	ervation of Plant Spe		in Areas of			Other (explain below)
	ged Inundation/Sature	_	III / WOOD O		Constitution of Section 18 and 18	Cition (Gapitalis Bolom)
		ROIT	<b>☑</b> YES	□ NO		
Hydrophytic Veget	ation Present?		1 1€2	L) NU		
LIVEROL OCV		<u> </u>		- Boronik yang dinggan	**************************************	<u>r all marketer et et et en </u>
HYDROLOGY			<del></del>			The second secon
Is it the growing season?		□ NO`	m multiplication	ete e a compressión a		
Based On:	Soil Temp (record)			Colorador (Colorador)	Wetland Hydrole	•
	Other (explain)		ti kan libihik	State to accomp	Primary Indic	cators:
Typical length:		Days	5% =	<u> </u>		Inundated
						Saturated Upper 12 Inches
Recorded Data (describe	below):					☐ Water Marks
	Stream, Lake, or Ti	ide Gauge				Drift Lines
	Aerial Photographs					Sediment Deposits
	Other	•				Drainage Patterns in Wetlands
						Comesor and treesing
	None Available			····	1	
Field Observations:		8 1 mil. 41.			Secondary Inc	dicators (2 or more required):
•	urface Water:		inches		ļ	Oxidized Rhizospheres in Upper 12 Inches
	anding Water In Pit:	>26				Water-Stained Leaves
Depth to Sa	aturated Soil:	>26	inches		1	Local Soil Survey Data
					[	FAC-Neutral Test
	. –					Other (explain below)
Wetland Hydrology	Present?		☐ YES	<b>☑</b> 160		
Remarks: No evidence of we	etland hydrology ob	and the second section in the	رجازي المحترجية وفحدات	, a production of the contract	rm and staff gau	ige at east end.
aki ga open, kodo Garaka alimbir			karangan dari Asmangan dari		d a skiller oppræsiser: Tyler og i Dilperion Tallegaldes, fallse de	

SOILS	***************************************					F	Plot ID:
Map Unit Name (	series and pha	se): <u>Diablo Clay, 30</u>	lo 45% slopes, eroded		Drainage Class:	and the second of the second	
Taxonomy (subgr	oup): <u>And</u>	ic Hapioxererts		Field observat	ions confirm mapp	ed type?	YES IND
s data point local	ed within a hyd	ric inclusion?	✓ YES 🗌 NO	:			
Profile Descriptio	•						
<u> </u>				Re	doximorphic Feat	ures	
	]						]
	Depth		Matrix Color	Abundance,			
Horizon (i	inches) Te 0-15	xture Structure	(moist)	Size, Contrast	Type, location	Color (moist)	Other
	15-26+	c 3dpr c 2dabk	26-6Y-3/1 6Y-3/1	none	Andrew Torresidad	<u>-</u>	Thin A horizon-not described
Linea						in and gar	
				anijait ing	An Military Link of St.		
				Y			
Hydric Soll Indica							
	Hist			. :==:	Concretions or No		
	=	ic Epipedon		= -	anic Content In Sui	•	andy Solls
	· · · =	idic Odor ic Moisture Reglme			itreaking in Sandy National/Local Hy		
		ucing Conditions ( $\alpha$ ,	α¹ - dipyridyl test)		MationavLocal Hy plain below)	THE GOILD FIRST	
		red or Low-Chroma (≤1)			an bolon)		
	· · · == ·		oximorphic Concentrations	and/or Depletio	ns	_	_
Hydric Soils F			☑ ¥ES □ ₩Q				
Remarks:			the state of Ballion B. The state of the Sta				<del></del>
WETLAND DE1	ERMINATION			er i bordin i er er den i er filk Danselle semenn			
Hydrophytic ve	getation presen	1?	☑ YES □ NO	:			
Wetland hydro	logy present?		□ ves ☑ no	Ĺ			
Hydric soils pre			☑YES ☐NO	ils the sampli	ng point within a	wetland?	YES NO
Remarks:					<u>. y                                   </u>		
vernal poo	ı vve assume		d hydrology - wet during	uie rainy seas	on, dry during in	e.aummer,	
Tava	Texture an	d Rock Fragment C		Abundanc		Orphic Feature	Morphology
Cos - coarse sand	vfel .	very fine sandy loam	Rock Fragments gr - gravelly	I - few	<u> </u>	Fe-x - Iron C	oncentration (soft mass)
s - sand	1 - 10:	am	vgr - very gravelly	c - cammo	n	Fe-nc - Iron	nodule or concretion
s - fine sand		silt loam	xgr - extremely gravelly	m - many			ganese concentration (soft mass) riganese nodule or concretion
rfs - very fine sand cos - loamy coarse	si-s	sandy clay loam	cb - cabbly vcb - very cabbly	Size	<del></del>	d - depletion	
s - loamy sand		lay loam	xcb - extremely cobbly	1 - fine (<2		<u> </u>	
ts - loamy fine sand		slity clay loam	st - stony	2 - medium		Location	ntely
vfs - loamy very find cost - coarse sandy		sandy clay silty clay	vat • very atony xst • extremely atony	3 - coarse :	(5–20mm) arse (20–76mm)	mat - spil m ped - ped si	
si - sandy loam	c - c		ver - Avnaumit andi		aly coarse (>76mm)	par - sail po	
fsl - fine sandy loam	l			Contrast f - faint		_ olr - olher -	

p - prominent

Project/Site:	LLNL Site 300	To the property of the control of th			State:	CA			Transiti
Applicant/Owner:	US DOE				County:	Alameda	<u>a. Kani ggai ,</u>		e tata di basa in
Investigator(s):	Preston & Frazie		<u> </u>		S/T/R	A CONTROL OF THE CONT		*	<u> </u>
Date:	07/03/02	<u> </u>		tita jaran 1		<u></u>			
Do normal circumstance			<b>☑</b> YES	□ NO:	Community ID:	upland/seasonal	wetland edge		
Is the site significantly di		ation)?	YES	<b>☑</b> NO	Transect ID:	2			
is the area a potential pri			YES	Ø NÓ	Plot ID:	28			
(If needed, explain belo	ow)				<del></del>				
VEGETATION									
Dominant Plant Species	s	Strata	% Rel. Cov		Associate Plan	t Species	Strata %	Rel. Cover	Indicator
Bromus hordeaceus		herb	English Control	FACU			f. compression		
Bromus rubens	<u></u>	herb	A. F. C.	UPL					
				I American				1.014 .74 .014	
	<u> 1111 122 14 14 14 14 14 14 14 14 14 14 14 14 14 </u>								
				1. 14 14 59					
	The second second								Maria and Carlo
			dy v parit decide (g) tagging and a						
Percent of dominants th	<del></del>	EAC (aucli	ding EAC )	Standard Co. 1971	Apr. 20	·····	tation cover	- Tribulation	%
Percent or commants to	at are Obl., FACW, C	r MC (exclu	uing FAC-):	<u> 2365 - 8000 200</u>	0%	_ rotal vege	tation cover	·USUS AND AND	76
								_	
	cal Adaptations							lant Commur	nities
	al/Reproductive Adap					Technical Literature			
☐ Visual Obs	ervation of Plant Spe	cies Growing	in Areas of			Other (explain belo	w)		
Prolong	ged Inundation/Satura	ation							
Hydrophytic Veget	ation Present?		YES	☑ NO					
Remarks:	audit i fosciici						<del></del>	<u>_</u>	
			<u> </u>	<u> </u>	B. Carlotte and Ca				in the second
HYDROLOGY	The same and the same		<del></del>		T				
s it the growing season?									
Based On:	Soil Temp (record)		<u></u>	<u> </u>	Wetland Hydrol	ogy Indicators:			
LJ	Other (explain)			·	Primary Indic	ators:			
Typical length:		Days	5% =			Inundate	ed .		
,.		•			]	☐ Saturate	d Upper 12 Inch	es	
Recorded Data (describe	below):					☐ Water M	arks		
	Stream, Lake, or T	ide Gaune				☐ Drift Line	15		
	Aerial Photographs						it Deposits		
4	·/	)			Ì	_	•	tlande	
	Other					Drainage	Pattems in Wei	uangs	
	None Available				-				
Field Observations:					Secondary Inc	dicators (2 or more re	equired):		
Depth of Si	urface Water:	0	inches			Oxidized	Rhizospheres in	upper 12 Ir	nches
Depth to St	tanding Water in Pit:	>18	inches			☐ Water-St	tained Leaves		
Depth to Sa	aturated Soil:	>18	inches			Local So	il Survey Data		
						_	utral Test		
						U Other (ex	xplain below)		
Wetland Hydrology	Present?		☐ YES	☑ NO					
	etland hydrology ob								
			kamedini. Nataria						

SOILS						F	Plot ID:
Map Unit Name (series	and phase):	Diablo Clay, 30 to	45% slopes, eroded		Drainage Class:	well drained	The state of the s
axonomy (subgroup):	Ardic Haplox	kerents		_Fleld observat	ions confirm mapp	ed type?	☐YES ☑NO
data point located with	nin a hydric inclus	sion?	☑ YES ☐ NO				
Profile Description	,		<del></del>				
	<u> </u>		,	Re	edoximorphic Feat	ures	
	İ				,		1
Depth	1		Matrix Color	Abundance.			
Horizon (inches	) Texture	Structure	(moist)	Size, Contrast	Type, location	Color (moist)	Other
A) 0-10	c	2cor :	2.5Y 3/1-2.5/1	1, 1, p	Fe-x, otr	7:5YR 4/6	Fe-x in root channel
			2 3 3 7 2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	f, 1, f	d, mat	2.5Y5/2	d may be CaCO3 mass
Bkss 10-18+	C	1-2cabk	2.5Y 3/1	none	201	-	
			<u> </u>				
		<u> </u>	#1.1			ja mani ili	<u>Primaire voj sojest</u>
Hydric Soll Indicators (c	heck all that app	<del>!y):</del>		□ No or Fo	Cancretions or No	dulas	
	∷ Histic Epipe	daa	#		anic Content In Su		andu Salle
	Sulfidic Odo			<del>-</del>	streaking in Sandy		alloy Solis
	Aquic Moist				National/Local Hy		
		onditions ( $\alpha$ , $\alpha$ '	- dipyddyl test)	· -	plain below)	and don't list	
		onutions ( ຜຸຜ ow-Chroma (≤1) m		Ci Oniei (ex	piani oolow/		
<u> </u>	<del></del>		morphic Concentrations	and/or Depletion	ns		
Hydric Soils Preser			☑YES □NO				
Remarks:	•••		<u> </u>				\
VETLAND DETERMI	NATION:						
Hydrophytic vegetatio	n present?		☐YES ☑NO				
Wetland hydrology pr	esent?		YES INO				
Hydric soils present?			YES NO.	Is the sampli	ng point within a	wetland?	YES NO
Remarks:					- S Lane thank a		
year with greater	precipitation						
Tex	ture and Rock	Fragment Cont	ent		Redoximo	orphic Feature	Morphology
exture			Rock Fragments	Abundanc	•	Туре	
os - coarse sand - sand	vfal - very fine I - loam	sandy loam	gr - gravelly vgr - very gravelly	f - few c - commo	n		oncentration (soft mass) nodule or concretion
- sand - fine sand	sil - silt loam		xgr - extremely gravelly	m - many	•		nodule or concretion ganese concentration (soft mas
is - very fine sand	si - silt		cb - cobbly			_ Mn-nc - mai	nganese nodule or concretion
os - loamy coarse sand	sci - sandy cla	y loam	vcb - very cobbly	5/ze		_ d - depletion	
s - loamy sand s - loamy fine sand	cl • clay loam sict - silty clay	loam	xcb - extremely cobbly st - stony	1 • fine (<2 2 - medium		Location	
fs - loamy very fine sand	sc - sandy da	y	vst - very stony	3 - coarse	(5–20mm)	mat - soil m.	strtx
osi - coarse sandy loam  - sandy loam	sic - silly clay c - clay		xst - extremely stony		arse (20–76mm) Ny coarse (>76mm)	ped - ped su por - spil po	
si - fine sandy loem				Contrast		_ otr - other	
				f - faint		-	
				d - distinct			
				p - promine	ent		

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	The following the state of the				7	•	was Maria		
Project/Site:	LLNL Site 300	1 10 1 111			State:	CA	10 10 10 10 10 10 10 10 10 10 10 10 10 1		British (British Color), 547 Grand (British Color)
Applicant/Owner:	US DOE				County:	San Joaquin		Manual time to	
nvestigator(s):	Preston & Frazie				S/T/R				
Date:	07/03/02					198	erita in		
Do normal circumstance		-4: <b>\</b> D	☑ YES	∐ NO ☑ NO	Community ID:	slope/seep wet			<u> </u>
Is the site significantly of	* **	ation)'?	☐ YES  ☑ YES	□ NO	Transect ID: Plot ID:	3A	-		
is the area a potential p (If needed, explain be			C TES	- UNO	FIOLID:	3A	=		
111 HODGOG, GADISHI DE	1044 j					· • · · · · · · • · · · · · · · · · · ·			
VEGETATION									
VEGETATION			1				· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
Dominant Plant Speci		Strata	% Rel. Cover	Indicator	Associate Plan	t Species	Strata	% Rel. Cover	Indicator
Urtica dioica		herb		FACW		tale training to A. R.			
Marrubium vulgare		herb		FAC	The first state of the first state of the st				
			tille i krej st		i karan, Karabah bisak	Selbert etter fröderingen.			
<u>,</u>							Control of the second		
						ing were being sta	Marking Space		entralia de la compansión
	<u> </u>								igaren ar ar
			1			. A properties	<b>i</b> sterija i		
			:						
Percent of dominants t	hat are OBL, FACW, o	or FAC (exclu	iding FAC-):		100%	Total veg	etation cove		%
	gical Adaptations				<u></u>	Personal Knowled		nal Plant Commu	unities
☐ Physiolog	ical/Reproductive Ada	ptations				Technical Literatu	ure		
U Visual Ob	servation of Plant Spe	cies Growing	in Areas of			Other (explain be	low)		
	nged Inundation/Satura								
Hydrophytic Vege			<b>☑</b> YES	□ NO					
	station Fresentr			11 THE ST. 12					
Remarks:						e en en en al			44
				•				1	
					4 4		LANCE.	an recomme	
					, , , , , , , , , , , , , , , , , , ,			<del></del>	
HYDROLOGY		<del></del>				energy control of the second of the	Control Marine (No. 1)		
is it the growing season	? 🗹 YES	.∐.NO∷							
Based On:	Soil Temp (record)			والأعيار الموادية	Wetland Hydro	ogy Indicators:			
. U	Other (explain)				Primary Indic	ators:			
Typical length:		Days	5% =	: des		☐ Inunda	ited		
•	-					☐ Satura	ted Upper 12	Inches	
Recorded Data (describ	ve pelom).					□ Water			
	Stream, Lake, or T	ida Gaura				Drift Lie			
		•							
	Aerial Photographs					·	ent Deposits	- 144 - 14 4 -	
	Other					Draina	ge Patterns i	n wettands	
	None Available				-				
Field Observations:					Secondary In	dicators (2 or more	required):		
Depth of S	Surface Water:	0	inches		l	☐ Oxidize	ed Rhizosphe	res in Upper 12	Inches
Depth to S	Standing Water in Pit:	≥16	inches			□ Water-	Stained Leav	es	
Depth to \$	Saturated Soil:	>16	inches			□ □ □ Local S	Soil Survey D	ata	
						and the same of th	leutral Test		
				<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	L	Other (	explain belov	v)	
Wetland Hydrology	y Present?		☐ YES	☑ NO					
Remarks:									
Noevidence of w	etland hydrology ob	served.							
			• .					figh swipe	
	4.				ukorani ik				
							1		
and the second of the second				ti bara dana at iin	ranca escribilitada la la				

SOILS					P	lot ID:
Map Unit Name (series a	nd phase): Alo-Vaquero c	omplex, 30 to 50% slopes		Drainage Class:	well drained	
Taxonomy (subgroup):	Aridic Haploxerents-Andic I			ions confirm mapp		YES INO
	<del></del>	YES NO			-76-1	
ls data point located withi Profile Description	п а пуолс іпсіцѕюл?	وتأنج وتايين				
Frome Description	<del></del>			adoximomhia E4	11700	
			R	edoximorphic Feat		
Donth		Matrix Color	Abundance,			
Horizon (inches)	Texture Structure	(moist)	Size, Contrast	Type, location	Color (moist)	Other
0-10	cl 2mgr	10YR3/2	none			
10-16+	fsl massive	5Y 6/2-6/3 & 5Y4/2	vf, 1, d	Fe-x, mat	2.5Y 5/6	varigated colors in ma
						most of matrix is 5Y
Hydric Soil Indicators (ch						
: · · <b>_</b>	Histosol			Concretions or No		
<u></u>	<b>-</b>		itPetas	anic Content in Su	-	indy Soils
	Sulfidic Odor	1.13	5 1 a r r <del>95 m/</del> 1	treaking in Sandy		
=	Aquic Moisture Regime Reducing Conditions ( α,	Of disorded took	U Listed on Uther (ex	National/Local Hy	and Solis List	
Ĺ	Reducing Conditions(		C Other (ex	рын рею <b>w</b> )		
<u></u>	☐ Gleyed or Low-Chroma (<) ☐ Matrix Chroma ≤2 with Rec	5 5 6	s and/or Depletic	ins		
		YES NO			<del></del>	
Hydric Soils Present	<u>r</u>	EL 153 EL NO	<u> </u>	<u>_</u>		
Remarks:	d on debris bench of an old					
ing distribution of the state o			enen, fanst in Gwyddiaith, f		enga, en el processo de serio La la	stan profesion processi di seria Liver III della seria della seria di seriali Il di con processi di seriali di seriali di seriali di seriali di Mancantaggia di Capata Patria della seriali di seriali
		British Andrew British	www.iii.gov. Halikina	C. P. Landing and		
WETLAND DETERMIN	ATION:					
Hydrophylic vegetation	present?	☑ YES □ NO				
Wetland hydrology pre	sent?	YES INO				
Hydric solls present?		☑ YES ☐ NO	Is the sampli	ng point within a	wetland?	YES NO
Remarks:			· <del></del>	<u>/</u>		
Hillside seep; assu	med to have seasonal wet	land hydrology that is no	t evident during	July.	المعرضة ويحوش	ngarana ahinggayya ba
						l Maria de la Caracteria de Caracteria de Caracteria de Caracteria de Caracteria de Caracteria de Caracteria d La granda de Caracteria de
		in the state of th				
					15111111	
					baha da Anaq	es. Paddiniet
	eri de fila e Geria			Appendig Person		
			n nem over seller En 11. en 1985 et 1	The former of the control of the con	garan da karanta da Garanda e estable de	
		7 47 4 44 7 • • • • • • • • • • • • • • • • • • •				
					<u> </u>	
Text	ure and Rock Fragment C	ontent		Redoximo	orphic Feature	Morphology
exture		Rock Fragments	Abundano	•	Туре	
os - coarse sand - sand	vfsi - very fine sandy loam i - loam	gr - gravelly vgr - very gravelly	f - few c - commo	•		oncentration (soft mass) nodule or concretion
s - sand s - fine sand	sil - sill loam	xgr - vary gravelly xgr - extremely gravelly	m - many	••		nodule or concretion janese concentration (soft m
rfs - very fine sand	si - sitt	cb - cobbly			Mn-nc - man	ganese nodule or concretion
cos - loamy coarse sand s - loamy sand	sci - sandy clay loam ci - clay loam	vcb - very cobbly xcb - extremely cobbly	5/ze 1 - fine (<2	mm)	d - depletion	
fs - loamy fine sand	sicl - silty clay loam	st - stony	2 - mediun		Location	
vfs - loamy very fine sand	sc - sandy clay	vst - very stony	3 - coarse	(5–20mm)	mat - soil ma	
cosi - coarse sandy loam si - sandy loam	sic - silty clay c - clay	xst - extremely stony		arse (20-76mm) ely coarse (>76mm)	ped - ped su por - soil por	
si - fine sandy loam	,				otr - other	<del></del>
			Contrast		_	
			f - faint d - distinct			
			p - promine			

9/27/02 Data Point 3A.xis



Investigator(s):	US DOE				State:	CA			
- ''		- 144. 1. 1. 1.	operation in the second		County:	San Joaquin			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Preston & Frazier			<u> 11. januari (h</u>	S/T/R		Million de la companya de la company		
	07/03/02		and the same of th		·		vaje i dist		
Do normal circumstances e Is the site significantly distu is the area a potential probl (If needed, explain below	rbed (atypical situal em area?	tion)?	☐ YES ☐ YES ☐ YES	□ NO ☑ NO ☑ NO	Community ID: Transect ID: Plot ID:	upland/annut g 3 3B	rassland	9.450	m e certain (1999) 11 - August (1991)
VEGETATION			<u> </u>		<del></del>				
Dominant Plant Species		Strata	% Rel. Cover	3	Associate Plan	t Species	Strata	% Rel. Cover	Indicato
Bromus hordeaceus		herb		FACU	1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u> </u>	1. 1.1.1.1.1.		
Bromus diandrus		herb		UPL			. ::::::		
Marrubium vulgare		herb		FAC	+ 1,4 1 (A. 1)		<del> </del>		e d'il tein d
									1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
en e	- Lat. 1:8178[ci.	THE REPORT OF THE PARTY OF	kalahan samusi Majara samusi			egitteleelle, laat 120e af Annaarvan in de tankeel			
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
<del></del>		distribili EAR	DE SESTIMA		A to the state of	alba do balanda. Sennapa Presidad			341) - 02 V #141
			Ber A. C. St. Color	4			<b>R</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	1	
Percent of dominants that a	are OBL, FACW, or	r FAC (exclu	ding FAC-):		98%	Total veg	etation cover		<u>.</u> %
_					<u> </u>				
Morphological								nal Plant Commu	unities
	Reproductive Adap				<u> </u>	Technical Literatu			
☐ Visual Observ	ation of Plant Spec	ies Growing	in Areas of		.:[	Other (explain be	low)		
- Alengi Chael A						,			
	Inundation/Saturat	lion	10 ° 2' 7' - 1 ' 7' 7' 1' 1' 1'	-,					
			YES	<b>☑</b> No					
Prolonged Hydrophytic Vegetat Remarks:				<b>V</b> NO					
Prolonged Hydrophytic Vegetat Remarks: HYDROLOGY	ion Present?			<b>⊘</b> No					
Prolonged Hydrophytic Vegetat Remarks:  HYDROLOGY s it the growing season?	ion Present?			<b>☑ NO</b>					
HYDROLOGY  Is it the growing season?  Based On:	Ion Present?  ✓ YES Soil Temp (record)			<b>☑ №</b>	Welland Hydrol				
HYDROLOGY s it the growing season?  Based On:	✓ YES Soil Temp (record) Other (explain)	ino				ators:			
HYDROLOGY  Is it the growing season?  Based On:	✓ YES Soil Temp (record) Other (explain)			<b>☑ NO</b>	Welland Hydrol	ators:			
HYDROLOGY s it the growing season? Based On: Typical length:	✓ YES Soil Temp (record) Other (explain)	ino			Welland Hydrol	ators: Inunda Satura	ted Upper 12	Inches	
HYDROLOGY  Is it the growing season?  Based On:  Typical length:  Recorded Data (describe be	기 YES Soil Temp (record) Other (explain)	NO Days			Welland Hydrol	ators: Inunda Satura Water	ted Upper 12 Marks	Inches	
HYDROLOGY s it the growing season? Based On: Typical length:  Recorded Data (describe be	☑ YES Soil Temp (record) Other (explain) elow): Stream, Lake, or Tic	NO Days			Welland Hydrol	ators: Inunda Satura Water Drift Lii	ted Upper 12 Marks nes	Inches	
Hydrophytic Vegetat Remarks:  HYDROLOGY sit the growing season? Based On: Typical length:  Recorded Data (describe be	✓ YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs	NO Days			Welland Hydrol	ators: Inunda Satura: Water Drift Li	ted Upper 12 Marks nes ent Deposits		
Hydrophytic Vegetat Remarks:  HYDROLOGY  s it the growing season?  Based On:  Typical length:  Recorded Data (describe be	Ion Present?  YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs Other	NO Days			Welland Hydrol	ators: Inunda Satura: Water Drift Li	ted Upper 12 Marks nes		
Hydrophytic Vegetat Remarks:  HYDROLOGY s it the growing season? Based On:  Typical length:  Recorded Data (describe be	✓ YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs	NO Days			Wetland Hydrol Primary Indic	ators: Inunda Satura: Water Drift Li Sedime Draina	ted Upper 12 Marks nes ent Deposits ge Patterns in		
Hydrophytic Vegetat Remarks:  HYDROLOGY s it the growing season? Based On: Typical length:  Recorded Data (describe be	✓ YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs Other	□ NO  Days  de Gauge	5% =		Wetland Hydrol Primary Indic	ators: Inunda Satura: Water Drift Li Sedime Draina;	ted Upper 12 Marks nes ent Deposits ge Patterns in	n Wetlands	
Hydrophytic Vegetat Remarks:  HYDROLOGY  s it the growing season?  Based On:  Typical length:  Recorded Data (describe be	✓ YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs Other None Available	□ NO  Days  de Gauge	5% =		Wetland Hydrol Primary Indic	ators: Inunda Satura: Water Drift Li Sedime Draina;	ted Upper 12 Marks nes ant Deposits ge Patterns in required): ad Rhizosphei	n Wetlands res in Upper 12	Inches
Hydrophytic Vegetat Remarks:  HYDROLOGY  sit the growing season?  Based On:  Typical length:  Recorded Data (describe become and processes)  Field Observations:  Depth of Surface Depth to Standard	YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs Other Hone Available ace Water: ding Water in Pit:	□ NO  Days  de Gauge  0  >17.	5% =		Wetland Hydrol Primary Indic	ators: Inunda Satura: Water Drift Li Sedime Drainae Gicators (2 or more Water- Water-	ted Upper 12 Marks nes ant Deposits ge Patterns in required): ad Rhizosphet Stained Leave	n Wetlands res in Upper 12 es	Inches
Hydrophytic Vegetat Remarks:  HYDROLOGY  Is it the growing season?  Based On:  Typical length:  Recorded Data (describe become b	YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs Other Hone Available ace Water: ding Water in Pit:	□ NO  Days  de Gauge	5% =		Wetland Hydrol Primary Indic	ators:   Inunda   Satural   Water   Drift Ling   Sedime   Drainal   Calors (2 or more   Oxidize   Water-   Local S	ted Upper 12 Marks nes ant Deposits ge Patterns in required): ad Rhizosphet Stained Leave Soil Survey Da	n Wetlands res in Upper 12 es	Inches
Hydrophytic Vegetat Remarks:  HYDROLOGY  s it the growing season?  Based On:  Typical length:  Recorded Data (describe become and processes)  Field Observations:  Depth of Surface Depth to Standard	YES Soil Temp (record) Other (explain) Stream, Lake, or Tickerial Photographs Other Hone Available ace Water: ding Water in Pit:	□ NO  Days  de Gauge  0  >17.	5% =		Wetland Hydrol Primary Indic	ators:   Inunda   Satural   Water   Drift Lin   Sedime   Drainal   Inunda   Oxidize   Water-   Local S   FAC-N	ted Upper 12 Marks nes ant Deposits ge Patterns in required): ad Rhizosphet Stained Leave	n Wetlands res in Upper 12 es ata	Inches

SOILS							F	Plot ID:
Map Unit Name	(series and	l phase):	Alo-Vaquero cor	nplex, 30 to 50% slopes		Drainage Class:	well drained	
•							'	□YES ☑NO
axonomy (subg	roup):	Aridic Hapic	xerents-Aridio Ha	ploxererts	i-leid observat	ons confirm mapp	ea type?	
s data point loca		a hydric inclu	sion?	YES IND	2.1			
Profile Descriptk	on							
					Re	doximorphic Feat	ures	
1								
	Depth			Matrix Color	Abundance,			
	(inches)	Texture	Structure	(moist)	Size, Contrast		Color (moist)	Other
A1	0-7	vfsl	<u></u>	10YR3/2	none	H :: = H	<del> </del>	
A2/Bk	7-17+:	sil		10YR2/1	none			few, fine carbonate masse
							d forme option of sections. The former of the section of the secti	**************************************
		1	<u></u>				i kari yang dipakabata Kari yang Kara (1986)	
Undric Sall ladia	atom (char	<u>∤∠</u>	<u>Egun and distribution</u>	and many grading states and states and states and states and states and states are states and states and states are state		<u>protonjog kalijety</u>		Married Co.
Hydric Soil Indic	aturs (Chec	Histosol	ny J.	The state of the s	Mn or Fe	Concretions or No	dules	
15	H	Histic Epipe	don		4	anic Content in Su		andy Soils
	님	Suffidic Odd		11111 1414	11.00	itreaking in Sandy		and a della
	H	Aquic Moist		1470 H	1 111	National/Local Hy		
	Н	•	_	y'- dipyridyl test)	: · ==	plain below)	U UVIIG EIGE	
	H	•	ow-Chroma (≤1)			pian colon j		
	H			ximorphic Concentration	·: :- ns and/or Depletio	กร		
Administra © 18 1	<u>ب.</u> مدند د دو	HILLY X CHILD	ZE WIGHT TOOL	YES Z NO				
Hydric Soils   Remarks:	rresent?		<del>_</del>	LINC	<b>y</b> .			
					randra e e e e e e e e e e e e e e e e e e e	nan ing ta <del>ndala 1</del> 56 Ali 1941 - Milland Ma Manggaratan dalah		
WETLAND DE	,							-
Hydrophytic ve	egetation p	resent?		☐YES ☑ NO	unaki arku			
Wetland hydro	ology prese	nt?		☐YES ☑ NO				
Hydric soils pr	esent?			☐ YES ☑ NO	Is the sampli	ng point within a	wetland?	☐ YES ☑ NO
Remarks:			-		- · · ·			
					Angel viller to film in the			
	Taytu	re and Roci	k Fragment Co	entent		Redoxima	orphic Feature	Morphology
Texture	10/10			Rock Fragments	Abundanc		Type	
cos - coarse sand		vfsl - very fin	e sandy loam	gr - gravelly	f - few			oncentration (soft mass)
- sand		í - Ioam	*	vgr - very gravelly	c - commo	n		nodule or concretion
s - fine sand		sif - sift loam		xgr - extremely gravelly	m - many			ganese concentration (soft mass nganese nodule or concretion
fs - very fine sand cos - loamy coarse		al - silt aci - sandy ci	av loam	cb - cobbly vcb - very cobbly	Size		_ Mn-ric - mai d - depletion	=
s - loamy sand		ci - clay loam	•	xcb - extremely cobbly	1 - fine (<2	നന)		
ís - loamy fine san		sicl - silty cla	y loam	st - stony	2 - medium	2-5mm)	Location	
vts - loamy very fir		sc - sandy cla	-	vst - very stony	3 - coarse	•	mat - soil m	
:os) - coarse sand) :l - sandy loam	y ioam	sic - slity clay c - clay	1	xst - extremely stony	-	arse (20–76mm) Ny coarse (>76mm)	ped - ped so por - soil po	
si - fine sandy loar	n						oir - other	
					Contrast f - faint		-	
					d - distinct			
					p - promine	ent		

9/27/02 Data Point 3B.xis

Investigator(s):	US DOE Preston & Frazier				State:	CA		4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.	
Date: 0 Do normal circumstances ex ls the site significantly disturus the area a potential problem.	Procton & Empior	<u> ::::::::::::::::::::::::::::::::::::</u>	MBT TO THE		County:	San Joaquin		Translation of the second	
Do normal circumstances ex Is the site significantly distur Is the area a potential proble		<u></u>	<del></del>		S/T/R				
Is the site significantly distur Is the area a potential proble	07/03/02	<u> </u>						erita gala de polarece. La la comunicación de la comunicación	
Is the area a potential proble			YES	□ NO	Community ID:	Intermittent stre	eam channe	I (fed by seep)	<u> </u>
		on)?	☐ YES	☑ NO	Transect ID:	4	<del>.</del>		
(It needed, explain below,			✓ YES	∐ NO	Plot ID:	4A	<del></del>		
		<del></del>							
VEGETATION									
Dominant Plant Species		Strata	% Rel. Cover		Associate Plan		Strata	% Rel. Cover	Indicator
eymus triticoides		herb		FAC+					
Irtica dioica		herb	L	FACW			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
<u> </u>		ليستنثث				TOTAL CONTRACTOR			
	est de la companya de								
									15 (ne <u>c)</u> 21
						14.2020200000000000000000000000000000000	i je je tek ni na na na Akon na k <u>upisi waté</u>		
					4		1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1		
Percent of dominants that a	ORI FACW. or	FAC (exclu	dina FAC-):		100%		etation cover	1 10 10 10 10 10 10 10 10 10 10 10 10 10	%
rejudin or administration.	16 OOM * 1 12 11 5 2 1 1		ding trie ,.	in this is to transcent.	31 BAC 19:1 ** **		1914UUI	М© моболика осторо полож	70
☐ Morphological	* * - * - * - * - * - * - * - * - * - *	•				Personal Knowled	of Degion	-1 Dlast Commit	Naa
		**			-			Iai Piani Commo	nities
· · · · · · · · · · · · · · · · · · ·	Reproductive Adapta					Technical Literatu			
	ation of Plant Specie		in Areas or			Other (explain be	HOW)		
Prolonged	Inundation/Saturation	חכ	and the state of the						
Hydrophytic Vegetati	ion Present?		✓ YES	ON	<u></u> .				
Remarks:									
Neiment.					* 44 44 44				
		1.1.14.44			The second second	latikiji je s			
THE STATE OF THE STATE OF			Al Anthropy and a Arthropy a Nagary	niana a sa	t M. L. Hand describer		Miller.		
5 (1)	a " a, <u>a, ilikilalin</u>	.a. <u>ia.i 1144.</u> e			erata dinganatra		şi <u>amılını</u>		1
HYDROLOGY		<u> </u>			T				<del></del>
		□ NO			1				
Based On: S	Soil Temp (record)		<u> </u>	<u> </u>	Wetland Hydrol				
ب. ر	Other (explain)				Primary Indic	ators:			
Typical length:		Days	5% =		r G	Inunda	ited		
. VF ↓		-			1	Satura	ited Upper 12	Inches	
	slow).				1	☐ Water			
Perorded Data (describe be	siow). Stream, Lake, or Tide	- Carina				D Drift Li			
Recorded Data (describe be	stream, Lake, or 1106 Aerial Photographs	) Gavyc				المناه ال			
□ s	ADDS WINGSTON				}	_	ent Deposits	errore cala	
□ s □ A					•	Uraina	ge Patterns ir	1 Wetlands	
□ s □ □ 4 □ 0	Other						-		
□ s □ □ 4 □ 0			<del></del>	<del></del>			_		
□ s □ □ 4 □ 0	Other			<del></del>	Secondary Inc	dicators (2 or more	required):		
s   a   c	Other None Available		inches		Secondary In	and the second second		eres in Upper 12 la	nches
S A A C C N N Field Observations:	Other None Available	>17	inches inches		Secondary In-	Oxidize		* *	nches
S A A C C N N Field Observations:	Other None Available  ace Water: ding Water in Pit:	>17	•		Secondary In	Oxidize Water-	ed Rhizosphe	res	nches
S A A C C N N Field Observations:  Depth of Surfa Depth to Stand	Other None Available  ace Water: ding Water in Pit:	>17	inches		Secondary In	Oxidize Water- Local S	ed Rhizosphe Stained Leav Soil Survey Di leutral Test	res ata	nches
S A C N Field Observations: Depth of Surfa Depth to Stand	Other None Available  ace Water: ding Water in Pit:	>17	inches		Secondary In	Oxidize Water- Local S	ed Rhizosphe -Stained Leav Soil Survey D	res ata	nches
S A A C C N N Field Observations:  Depth of Surfa Depth to Stand	Other None Available Rece Water: Ging Water in Pit:	>17	inches inches	☑no	Secondary In	Oxidize Water- Local S	ed Rhizosphe Stained Leav Soil Survey Di leutral Test	res ata	nches
Field Observations:  Depth of Surfa Depth to Stand Depth to Satur	Other None Available Rece Water: Ging Water in Pit:	>17	inches inches	<b>☑ N</b> O	Secondary In	Oxidize Water- Local S	ed Rhizosphe Stained Leav Soil Survey Di leutral Test	res ata	Inches
Field Observations: Depth of Surfa Depth to Stand Depth to Satur  Wetland Hydrology Pro	Other None Available  ace Water: ding Water in Pit: rated Soil:	>17 >17	inches inches		· · · · · · · · · · · · · · · · · · ·	Oxidize Water- Local S	ed Rhizosphe Stained Leav Soil Survey Di leutral Test	res ata	Inches
Field Observations:  Depth of Surfa  Depth to Stand  Depth to Satur	Other None Available  ace Water: ding Water in Pit: rated Soil:	>17 >17	inches inches		· · · · · · · · · · · · · · · · · · ·	Oxidize Water- Local S	ed Rhizosphe Stained Leav Soil Survey Di leutral Test	res ata	Inches
Field Observations: Depth of Surfa Depth to Stand Depth to Satur  Wetland Hydrology Pro	Other None Available  ace Water: ding Water in Pit: rated Soil:	>17 >17	inches inches		· · · · · · · · · · · · · · · · · · ·	Oxidize Water- Local S	ed Rhizosphe Stained Leav Soil Survey Di leutral Test	res ata	Inches
Field Observations: Depth of Surfa Depth to Stand Depth to Satur  Wetland Hydrology Pro	Other None Available  ace Water: ding Water in Pit: rated Soil:	>17 >17	inches inches		· · · · · · · · · · · · · · · · · · ·	Oxidize Water- Local S	ed Rhizosphe Stained Leav Soil Survey Di leutral Test	res ata	Inches

SOILS					P	lot ID:
Map Unit Name (series a	nd phase): Wisflat-Arburu	a-San Timoteo cómplex. 30	50% slopes C	Orainage Class:	well to some	vhate excessively draine
Taxonomy (subgroup):	See remarks below		_ Field observatio	ns confirm mapp	ed type?	YES INO
Is data point located within		☐ YES ☑ NO	-			
Profile Description	nyana maaanan	<del></del>				
	<del></del>	<del></del>	Red	loximorphic Feat	ures	
}				<del></del>		1
Depth		Matrix Color	Abundance,			ļ
Horizon (inches)	Texture Structure	(molst)	Size, Contrast	Type, location	Color (moist)	Other
A 0-17	s)	10YR 3/2	none		<b>-</b>	10% gravel
				en abrababate (C. E. S. )		
				y comment of the factor of the		
Hydric Soil Indicators (ch	eck all that apply):					
	Histosoí			oncretions or No		
	• •	•	= -	nic Content in Su		andy Soils
<u>_</u>	Sulfidic Odor  Aquic Moisture Regime	- ****** **	= -	reaking In Sandy Iatìonal/Local Hy		
	- ·	α' - dipyridyl test\	Other (expl	-	ALIC GOIIS EIST	
	Gleyed or Low-Chroma (<1		in carol (expi			
	= ·	loximorphic Concentrations		<u>s</u>		
Hydric Soils Present	?	□ YES ☑ HO				
Remarks: Wisflat (subgroup	laxonomy): Lithic Xerorthen	t; Arburua (subgroup taxe	nomy): Typic X	erorthents: Sar	Timoteo (sub	group taxonomy): Typic
		en e	i i i i i i i i i i i i i i i i i i i			
WETLAND DETERMIN	ATION ·	The state of the s		and the second s	a managalang a hayak da managalang di Salam	The state of the s
Hydrophytic vegetation		☑ YES □ NO	<del></del>	<u> </u>	<del></del>	
Wetland hydrology pres		☐YES ☑NO				
Hydric soils present?			is the eamoline	g point within a	watland?	∏yes ∏No
Remarks:		YES V NO	io uio oampiini	A Fronte Michilli 9	WCHAIN I	ு ஈ பல
.zeiner Få						1.30
4					k aproje vilitorini. Gaji karatorini	
	er fra film e (Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-A					
n i - Marthele y - Albaneski British Latingan ede british e	on and a distribution of the state of the st					rio algoropo de Colorido. Aspendantes e establista da
			ran in		ngari Minagala Kalabahan	
	State of the state					
		Gradiene (At People)				
<u>i i i i i i i i i i i i i i i i i i i </u>			agatil Laidhfeini		ga i de gal i del alle de la l La la	
Text	ure and Rock Fragment C	ontent	<del></del>	Redoximo	orphic Feature	Morphology
Texture		Rock Fragments	Abundance		Туре	
cos - coarse sand s - sand	vfsl - very fine sandy loam I - loam	gr - gravelly vgr - very gravelly	f - few c - common			oncentration (soft mass) nodule or concretion
s - fine sand	sil - silt loam	xgr - extremely gravelly	m - many		Mn-x - mang	anese concentration (soft ma
rfs - very fine sand icos - loamy coarse sand	si - sill scl - sandy day loam	cb - cobbly vcb - very cobbly	Size		Mri-nc - mar d - deplation	nganese nodule or concretion.
s - loamy sand	c) - clay loam	xcb - extremely cobbly	1 - fine (<2m		· ·	
its - learny fine sand	sicl - silty clay loam	st - stony	2 - medium 2		Location mat - soil ma	aidy
lvfs - loamy very fine sand cost - coarse sandy loam	sc - sandy clay sic - silty clay	vst - very stony xst - extremely stony	3 - coarse (5 4 - very coar	⊢∠∪mm) 'se (20–76mm)	ped - ped su	
si - sandy loam	c - clay	• -		coarse (>76mm)	por - soil po	
Isl - fine sandy loam			Contrast		_ otr - other	
			f - faint		-	
			d - distinct			

			7,001112	1212112	- I E I WIN A I TO	· 			
Project/Site:	LLNL Site 300		<del></del>		Stale:	CA			
Applicant/Owner:	US DOE		<del></del>	· · · · · · · · · · · · · · · · · · ·	County:	San Joaquin			<u> </u>
Investigator(s):	Preston & Frazie	r	<del> </del>	<del> </del>	S/T/R	<u> </u>			<u> </u>
Date:	07/03/02		<del> </del>					وأسلوا المساور	
Do normal circumstan		r' 10	YES	No	Community ID:	Upland (annual	grassland)	91/2011	
	disturbed (atypical situa	ation)?	YES	☑ NO ☑ NO	Transect ID: Plot ID:	48	Ė		
Is the area a potential (If needed, explain b			☐ YES:		FIGURE.	<b>39</b>	•		
TIT HEEGEG, EXDIGITE	CIOW)								<del></del>
VEGETATION									
Dominant Plant Spec	ies	Strata	% Rel. Cover	Indicator	Associate Plan		Strata	% Rel. Cover	Indicator
Bromus hordeaceus		herb		FACU	<u> </u>	<u> </u>			
Bromus diandrus		herb		UPL					<u>dinakan i</u>
		<u> </u>		1 101 1 11			na ja ilizaria:		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							W. C. L. J.		
<u>, ii. <u>, t</u>et<u>eti, ji</u></u>			(1)	Aug.					
			Security August			1404 (1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414   1414	المناوية أحبالا	49.5 486	
						Linear of the Comment	ingrigatyr acti Oggjeggan hara		
				May at a constant					
Percent of dominants	that are OBL, FACW, o	x FAC (exclu	iding FAC-):	Hatta iyol Hatta iyol	0%	Total vec	etation cover	ed a	%
	,		,			_			• '-
☐ Mombol	ogical Adaptations					Personal Knowled	dae of Pegies	al Plant Comm	mitice
	gical/Reproductive Ada	etations			ñ	Technical Literatu		Idi Fidik Ookak	inces
	gical/Reproductive Ada bservation of Plant Spe		in Arono of			Other (explain be			
4			In Areas of		· · · · · · · ·	Culer (explain be	iow)		
Proto	inged Inundation/Satura	ation		1, <del>-1</del> 40,00 (100)					
Hydrophytic Veg	etation Present?		☐ YES	☑ NO					
HYDROLOGY_									
	T WATER OF THE			<del></del>	T				
is it the growing season		Пио	is Tarani polito casa canadii 19	angung a da	ł	1			
Based On:	Soil Temp (record)				Wetland Hydrol				
, <b></b>	Other (explain)				Primary Indic	·			
Typicat length:		Days	5% =			☐ Inunda			
						A STATE OF THE STA	ted Upper 12	Inches	
Recorded Data (descri	be below):				{	U Water	Marks		
l U	:::: Stream, Lake, or T	ide Gauge				☐ Drift Lli	186		
	Aerial Photographs	3				Sedime	ent Deposits		
	Other					☐ Draina	ge Pattems in	Wetlands	
	None Available								
Field Observations					Spandary In	dicators (2 or more	required):		
Field Observations:	Surface Water:	· · · · · · · · · · · · · · · ·	inches		Secondary in	the second second		res in Upper 12	lachae
•	Standing Water in Pit:	>18	_		[	1 1 2 PT 151 1515	Stained Leav		1110103
	Saturated Soil:	>16	•			The state of the s	Soil Survey Da		
Depin to	Catalatos Con.		<u>_</u>				eutral Test	244	
							explain below	<i>t</i> )	
Wetland Hydrolog	y Present?		☐ YES.	<b>☑</b> NO	•			·	
Remarks:	-			<del>, <u>ag</u> g</del> a (Sanik					
	wetland flydrology ob	served.			en Hiller	general d	<u>Athebe</u>		(paggara)
				. 11					
. :	:::			ilida distant	111111111111111111111111111111111111111	un menerak di dilahiri 1917. Terapakan beraharan	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		

SOILS								lot ID:
Map Unit Na	me (series an	d phase):	Wisflat-Arburua-	San Timoteo complex. 30	-50% slopes	Drainage Class:	well to somew	mate excessively drained
Taxonomy (s	subgroup):	See remark	s below		Field observati	ons confirm mapp	ed type?	☐YES ☑NO
• •	located within	a hydric inclus	sion?	YES INO		•		
Profile Desc		,		<del>-</del>				
		T 1			Re	doximorphic Feat	ures	
	Depth	1 1		Matrix Color	Abundance,			
Horizon	(inches)	Texture	Structure	(moist)	Size, Contrast	Type, location	Color (moist)	Other
Α	0-16	s)		10YR2/1	none	orania de la composición dela composición de la composición de la composición de la composición dela composición de la composición dela composición dela composición de la composición de la composición de la composición dela composición		30% gravel, 5% cobble
11	#### <u>*</u>	1-74		Magazina (1877)				Marie and the second se
						The Advanced		And the second s
Hydric Soil I	ndicators (che		ly):					
		Histosol				Concretions or No		
	닏	Histic Epipe			<u> </u>	inic Content in Su	=	andy Solls
	님	Sulfidic Odo Aquic Moist				treaking in Sandy National/Local Hy		
		•	ure Regime onditions (α,α	'- dipyridyl test)	· <del></del>	nationavLocal Hyd plain below)	ui 10 Galles 1791	
	片	_	ow-Chroma (≤1)		C Curai (ext	, uu.vv)		
	ŏ			ximorphic Concentrations	and/or Depletio	ns		
Hydric So	ils Present?			YES INO	,			
Remarka:				Commence of the second	·			
WETLAND	DETERMINA	ATION :			HAL-49514			
Hydrophyt	ic vegetation p	present?	<u></u>	□yes ②no				
	ydrology prese	ant?		☐ YES ☑ NÖ				
	ls present?			YES NO	is the sampling	ng point within a	wetland?	YES NO
Remarks:								
	Textu	re and Rock	Fragment Co	ntent		Redoximo	orphic Feature	Morphology
exture		1 dal **		Rock Fragments	Abundance		Type	
os - coarse sa - sand	and	vfsl - very fine I - loam	sanoy loam	gr - gravelly vgr - very gravelly	f - few c - common	1		oncentration (soft mass) nodule or concretion
s - fine sand		meal this - lis		xgr - extremely gravelly	m - many		Mn-x - mans	panese concentration (soft mass
fs - very fine : :os - loamy co		si - sill scl - sandy cli	av loam	cb - cobbly vcb - very cobbly	Size	<del>.</del>	Mn-nc - mar d - depletion	nganese nodule or concretion
s - loamy sand		cl - clay toam	ay locali	xcb - extremely cobbly	1 - fine (<2	Tvm)	- a - achiestou	
fs - loamy fine	sand	sici - silty clay		st - stony	2 - medium	2-5mm)	Location	
vis - loamy ve :osi - coarse s :i - sandy loam	andy loam	sc - sandy cla sic - silly clay c - clay	-	vst - very stony xst - extremely stony		5–20mm) wse (20–76mm) ly coarse (>76mm)	mat - soll ma ped - ped su por - soll po	rfece
(s) - fine sandy	loam				Contrast f - faint		_ otr - other -	
					r - raint d - distinct p - promine	nt		

Project/Site: Applicant/Owner:	LLNL Site 300			#11 F	State:	CA			
	US DOE				County:	San Joaquin			
nvestigator(s):	Preston & Frazier			7	S/T/R				
Date:	07/03/02				1				
Do normal circumstance			☑ YES	□NO	Community ID:	Slope/seep wet	land		
s the site significantly d		ition)?	YES	☑ NO	Transect ID:	4		<u> </u>	
ls the area a potential pr			☑ YES	□ NO	Plot <b>i</b> D:	4C	<del>.</del>		
(If needed, explain be	low)				<u> </u>				
								_	
VEGETATION									
Dominant Plant Specie	98	Strata	% Rel. Cover	Indicator	Associate Plan	t Species	Strata	% Rel. Cover	Indicato
luncus balticus		herb		OBL					
Urtice dioice		herb	ing had a tagli	FACW	13.00		Karangan dan Karang Karangan dan Karangan dan Karang	1 Ariago	63044.64
sclepias fascicularis	<u> </u>	herb		FAC	transpirent and pulper			W. H.	<u>,</u>
						SILVIN LIPESE LUIK	in a		
<del></del>			i i i i i i i i i i i i i i i i i i i	1 1,11,111,12,12,1311 .,			NATIONAL PROPERTY.		
	<u> </u>	Lar didukir	Linear Line		di bermunikeni				
<del></del>									
							ي د د د کا	t.	
Percent of dominants th	nat are OBL, FACW, o	r FAC (exclu	ding FAC-):		100%	_ Total veg	etation cover		<b>%</b>
_									
	ical Adaptations					Personal Knowled		nal Plant Commu	unities
	cat/Reproductive Adap					Technical Literatu			
☐ Visual Obs	servation of Plant Spec	cies Growing	in Areas of			Other (explain be	low)		
Prolon	ged Inundation/Satura	tion							
Hydrophytic Vege			☑ YES	□ NO				-	
Remarks:			. 14 (A 44 ) (TO VI 1 ) (A 1 ) (A 1 )	- 10 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		<del></del>			
HYDROLOGY									
	• <b> </b>								
s it the growing season?	,				<u> </u>				
s it the growing season?	Soil Temp (record)				Wetland Hydrol	ogy Indicators:			
s it the growing season? Based On:	Soil Temp (record) Other (explain)	i die en Beile ein Dinoen			<u> </u>	ogy Indicators: ators:			
s it the growing season? Based On:	Soil Temp (record) Other (explain)				Wetland Hydrol	ogy Indicators: ators:	ted	Inches	
HYDROLOGY  Is it the growing season?  Based On:  Typical length:	Soil Temp (record) Other (explain)	i die en Beile ein Dinoen			Wetland Hydrol	ogy Indicators: ators:	ted ted Upper 12	Inches	
s it the growing season? Based On:	Soil Temp (record) Other (explain) e below):	□ no Days			Wetland Hydrol	ogy Indicators: ators: Inunda Saturat	ted ted Upper 12 Marks	Inches	
s it the growing season? Based On:	Soil Temp (record) Other (explain)  e below): Stream, Lake, or Ti	□ NO  Days  de Gauge			Wetland Hydrol	ogy Indicators: ators: Inunda Saturat Water Drift Lie	ted Upper 12 Marks nes	Inches	
s it the growing season? Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  e below): Stream, Lake, or Ti Aerial Photographs	□ NO  Days  de Gauge			Wetland Hydrol	ogy Indicators: ators: Inunda Satural Water Drift Lit	ted Upper 12 Marks nes ant Deposits		
s it the growing season? Based On:	Soil Temp (record) Other (explain)  below): Stream, Lake, or Ti Aerial Photographs Other	□ NO  Days  de Gauge			Wetland Hydrol	ogy Indicators: ators: Inunda Satural Water Drift Lit	ted Upper 12 Marks nes		
s it the growing season?  Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  e below): Stream, Lake, or Ti Aerial Photographs	□ NO  Days  de Gauge			Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Staturat Drift Lii Sedime	ted Led Upper 12 Marks nes ent Deposits ge Patterns in		
s it the growing season?  Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  e below): Stream, Lake, or Ti Aerial Photographs Other None Available	□ NO  Days  de Gauge	5% <b>=</b>		Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Drift Lit Sedime Draina	ted Upper 12 Marks nes ent Deposits ge Patterns in required):	ı Wetlands	
s it the growing season? Based On: Typical length: Recorded Data (describe	Soil Temp (record) Other (explain)  be below): Stream, Lake, or Ti Aerial Photographs Other None Available	□ NO Days de Gauge	5% ≖		Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Drift Lin Sedime Drainay	ted Upper 12 Marks nes ent Deposits ge Patterns in required):	ı Wetlands res in Upper 12	Inches
s it the growing season?  Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  be below): Stream, Lake, or Ti Aerial Photographs Other None Available  surface Water: standing Water in Pit:	□ NO  Days  de Gauge	5% =		Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Saturat Drift Lin Sedime Drainay  Glostors (2 or more Mater-	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav	ı Wetlands res in Upper 12	Inches
s it the growing season?  Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  be below): Stream, Lake, or Ti Aerial Photographs Other None Available	□ NO Days de Gauge	5% ≖		Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Drift Lin Sedime Drainay  Glostors (2 or more Water- Water- Local S	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Da	ı Wetlands res in Upper 12	Inches
s it the growing season?  Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  be below): Stream, Lake, or Ti Aerial Photographs Other None Available  surface Water: standing Water in Pit:	□ NO  Days  de Gauge	5% =		Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Drift Lin Sedime Drainap Sicators (2 or more Water- Local S FAC-Ne	ted Upper 12 Marks nes ant Deposits ge Patterns in required): ad Rhizospher Stained Leav Soil Survey Da eutral Test	ı Wetlands res in Upper 12 : es ata	Inches
s it the growing season? Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit: aturated Soil:	□ NO  Days  de Gauge	5% = Inches Inches Inches Inches		Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Drift Lin Sedime Drainap Sicators (2 or more Water- Local S FAC-Ne	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Da	ı Wetlands res in Upper 12 : es ata	Inches
s it the growing season?  Based On:  Typical length:  Recorded Data (describe	Soil Temp (record) Other (explain)  e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit: aturated Soil:	□ NO  Days  de Gauge	5% =		Wetland Hydrol Primary Indic	ogy Indicators: ators: Inunda Saturat Drift Lin Sedime Drainap Sicators (2 or more Water- Local S FAC-Ne	ted Upper 12 Marks nes ant Deposits ge Patterns in required): ad Rhizospher Stained Leav Soil Survey Da eutral Test	ı Wetlands res in Upper 12 : es ata	Inches
s it the growing season? Based On: Typical length: Recorded Data (describe	Soil Temp (record) Other (explain)  e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit: aturated Soil:	Days de Gauge 0 >19	5% = Inches Inches Inches Inches	Distriction of the second of t	Wetland Hydrol Primary Indio	ogy Indicators: ators: Inunda Saturat Saturat Drift Lin Sedime Draina Glicators (2 or more Water Local S FAC-No	ted Upper 12 Marks nes ant Deposits ge Patterns in required): ed Rhizosphe Stained Leav soil Survey De eutral Test explain below	res in Upper 12 es ata	

SOILS						F	Plot ID:
Map Unit Name (series	s and phase):	Wisflat-Arburua-	San Timoteo complex. 30	-50% slopes	Drainage Class:	well to some	vhate excessively drained
axonomy (subgroup):	the state of the s				ions confirm mapp		☐YES ☑ NO
				<del></del>	ions commit mapp	ad type i	
data point located wi	thin a hydric inclu	sion?	☐YES ☑ NO	#:			
Profile Description							
				Re	edoximorphic Feat	ures	4
				l			1
Depti		<b>a.</b> .	Matrix Color	Abundance,	************		0#
Horizon (incher		Structure	(moist)	Size, Contrast	Type, location	Calor (moist)	Other Off
A 0-19	sl		10YR2/1	попе		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8% gravel, 3% cobble
		<del></del>	<u> </u>				
		<del></del>					
łydric Soil Indicators (	check all that and	lv)	The state of the s	<u> </u>	<u> </u>	<u> </u>	4 · · · · · · · · · · · · · · · · · · ·
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Histosol	·1/·	29 V 6733	Mn or Fe	Concretions or No	dules	
	Histic Epipe	don	2004 (3004) Marijajan	13 10 10 10 10 10 10 10 10 10 10 10 10 10	anic Content in Su		andy Soils
	Suffidic Odd			reason -	itreaking in Sandy	·=	
7.14.12.13.13.13.13.13.13.13.13.13.13.13.13.13.	Aquic Moist		127 (17), 1100 (1), (1)	4 - 4 - <u>104 - 10</u> 4	National/Local Hy		
+ 14 (44 144 144 144 144 144 144 144 144		-	( - dipyrldyl test)	Other (ex	-	2.00	
	=-	ow-Chroma (≤1)	• • • • • • • • • • • • • • • • • • • •				
	=		ximorphic Concentrations	and/or Depletio	ns		
Hydric Salle Brazz			YES NO				<del></del>
Hydric Solls Prese Remarks:	ner (		<u> </u>				
VETLAND DETERM				· · · · · · · · · · · · · · · · · · ·	<u> </u>		
Hydrophytic vegetati			☑ YES ☐ NO				
Wetland hydrology p			☐ YES ☑ NO				_
Hydric soils present	?		☐YES ☑ NO	is the sampli	ng point within a	wetland?	YES NO
*******	exture and Roci	Fragment Co		<u> </u>		orphic Feature	Morphology
exture			Rock Fragments	Abundanc		Type	
s - coarse sand - sand	vfsl - very fine l - loam	: sangy loam	gr - gravelly vgr - very gravelly	f - few c - commo	n		concentration (soft mass) nodule or concretion
- fine sand	sil - silt loam		xgr - extremely gravelly	m - many	••		ganese concentration (soft ma:
s - very fine sand	si - slit		cb - cobbly			Mn-nc - mar	nganese nodule or concretion
os - loamy coarse sand	sci - sandy ci	ay loam	vcb - very cobbly	Size		d - depletion	1
- loamy sand	cl - clay loam	loam	xcb - extremely cobbly	1 - fine (<2 2 - medium	•	Location	
: - loamy fine sand is - loamy very fine sand	sict - silty clay sc - sandy cla		st - stony vst - very stony	2 - mediun 3 - coarse		mat - soil m	atrix
esi - coarse sandy loam - sandy loam	sic - silty clay c - clay		xst - extremely slony	4 - very co	arse (20–76mm) ely coarse (>76mm)	ped - ped su por - soli po	urface
il - fine sandy loam				Contrast	<del></del>	_ otr - other	
				f - faint		_	
				d - distinct			
				p - promine	ent		

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D1101	11ML 68- 006	7 TO 871 TO 1 12	ERVITARE FOR ST		Tal			Taring the second	on the second
Project/Site:	LLNL Site 300	The state of the s	Signature States		State:	CA	· · · · · · · · · · · · · · · · · · ·		
Applicant/Owner:	US DOE	oni i i i i i i i i i i i i i i i i i i	ration in Cal	filelie piets bi <mark>ž</mark> v	County:	Alameda	A Supplied to the second secon		1000
Investigator(s):	Preston & Frazle				S/T/R				in abstale diff
Date:	07/03/02								
Do normal circumstances			✓ YES	□ NO	Community ID:	perennial grass	land (Distic	hilis')	
Is the site significantly dis	, •,	ation)?	YES	☑ NO	Transect ID:	5			
Is the area a potential pro			✓ YES	□ NO	Plot ID:	5A	•		
(If needed, explain belo	w)				<u></u>	·			
VEGETATION									
Dominant Plant Species		Strata	% Rel. Cover	Indicator	Associate Plan	t Species	Strata	% Rel. Cover	Indicato
Distichlis spicata		¥158-11116	1/16/18 AMP 4 5	FACW.	Bromus diand			in the second of	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
						and the same of the same	Kiring and Angel		
		New York Control of the Control of t	75.03				**		, 7 <del>2 - 1</del> 5 1
		7.1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	EN						
			1	<del> </del>			13111111		
			aptenu establica en El El Tolor III (1885)	1		12 2000 1200 1 To 12 100	81 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<del>                                     </del>	<u> </u>
<del> </del>					apalik birok kaliki. Tani da	<u> Harris III. Data</u>	1		Kartolitiki Kartolitik
<u>.</u>		<u> </u>					L	1	
Percent of dominants that	it are OBL, FACW, o	x FAC (exclu	uding FAC-):		100%	_ Total veg	etation cover	· <u></u>	%
Morphologic	al Adaptations					Personal Knowled	dge of Region	nal Plant Commu	inities
	al/Reproductive Adap	otations			the state of the s	Technical Literatu	•		-
	rvation of Plant Spe		in Areas of			Other (explain be			
	ed Inundation/Satura		, iii Albaa Oi			. Other (explain oc	,		
	-	luon_				<del></del>			
Hydrophytic Veget	ation Present?		<b>☑ YES</b>	□ NO	· 				
			an Marianta di Kabasa Kalendria nya Mariasa						
HYDROLOGY s it the growing season?	☑ Yes : : : : : : : : : : : : : : : : : : :								
Based On:	Soil Temp (record)		dingga panaran	in a second and the s	Welland Hydrol				
T. L.	Other (explain)			7. M. 1	Primary Indic	ators:			
Typical length:		Days	5% =		1	inundat	bei		
•		•				☐ Saturat	ed Upper 12	Inches	
Recorded Data (describe	below):					☐ Water I	• •		
	Stream, Lake, or Ti	ida Gauco			}	Drift Lir			
T .							ent Deposits		
H	Aerial Photographs					= 000.10		Manua.	
벌	Other				ŀ	Drainag	ge Patterns is	n wellands	
	None Available				4				
Field Observations:					Secondary Inc	dicators (2 or more	required):		
Depth of Su	rface Water:	Ó.	inches					res in Upper 12	Inches
•	anding Water in Pit:	>19	inches			—	Stained Leav		
•	turated Soil:	>19	inches			. —	oil Survey D		
•			<del>-</del>				autral Test		
						Other (	explain belov	v)	
Wetland Hydrology	Present?		YES	☑ NO					
Remarks:	<del></del>		uwa, GT ( ) by c		<del></del>				
Neiliaika.	egalanti e e e e e	. ijet jizuki	Balgaria (France)					en endligt	a no sa r
	a den dan etgal								
	tjir og presid filli			医脂性二氏病	area Milare 18, es 11. Como de 18, es 11.				14
						1.11.11	ar en		i mana
							the factor of		41141
			in del come de la come. Britishim de la come et tita	11.4	and the second			ali medaleran	

SOILS_						***	F	lot ID:
Map Unit Na	me (series an	d phase):	Diablo clay, 30	to 45% slopes		Drainage Class:	well drained	
•	•	alian ya katar			· ·	ons confirm mapp		☑ YES ☐ NO
Taxonomy (s		Ardic Haplo				она совняя тарр	ou sype r	an tan ing sa pada an maala sa m
•	located within	a hydric inclu	sion?	□YES ☑NO				
Profile Desc	nption			<del></del>		daulas as bija da ir		г
			{			doximorphic Feat	ures	
		1		1	1			
Horizon	Depth (inches)	Texture	Structure	Matrix Color (moist)	Abundance, Size, Contrast	Type, location	Color (moist	Other
A1	0-7	cl	2	2.5Y 3/2	none		COROR (INCIDE)	
A2/Bk	7-19+	d	The state of the s	2.5Y 3/1-4/2	none	· · · · · · · · · · · · · · · · · · ·		carbonates masses near
			indige ja kapentija se si ili ili. Posta kapitaa ja lii li ili ili ili ili.	f te sullen mentegrein, per fille. Der sikonsen makere fild i 1900		in in the second		bottom of horizon
								are in the second of the secon
	#1.0°		Service of the servic				1	
<u> Iydric Soil i</u>	ndicators (che	.,	oły):			Danamatana	م ما دراه	
	H	∷ Histosol	dos		. ===:	Concretions or No		andu Calla
	片	Histic Epipe		y d	=======================================	inic Content in Sui treakion in Sandy	=	ariuy 50116
		Sulfidic Odd	or ture Regime			treaking in Sandy National/Local Hy		
	꿈	• • • •		$\alpha'$ - dipyridyl test)	=	Mailionai/Local my Main below)	one dons tist	
	片		.ow-Chroma ( <u>≤</u> 1)		C Cauci (ext			
	ă	-		oximorphic Concentrations	and/or Depletion	ns		
Hydric Sc	lis Present?			☐ YES ☑ NO			_	
Remarks								
VETLAND	DETERMINA	ATION :	<u> </u>					
	lic vegetation p			✓ YES NO				
Wetland I	ydrology prese	ent?		☐YES ☑NO				
Hydric sol	is present?			24 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	is the samplin	ng point within a	wetland?	YES INO
				here wetland hydrology ope connected with plar				s in this position probably
***************************************	Textu	re and Roc	k Fragment Co	ontent		Redoximo	orphic Feature	Morphology
exture				Rock Fragments	Abundance		Туре	_ <del></del>
os - coarse s • sand i - fine sand is - very fine		vfsi - very fin t - toam sil - silt toam si - silt	e sandy loam	gr - gravelly vgr - very gravelly xgr - extremely gravelly cb - cobbly	f - few c - common m - many	1	Fe-x - iron o Fe-nc - iron Mn-x - man	oncentration (soft mass) nodule or concretion panese concentration (soft mass) aganese nodule or concretion
os - loamy c	parse sand	sci - sandy ci		vcb - very cobbly	Size		d - depletion	
s - loamy sands - loamy fine		ci - clay loam sici - siity da		xcb - extremely cobbly	1 - fine (<2r		Location	<del></del>
s - icamy nne rfs - loamy ve		sc - sandy cla	-	st - stony vst - very stony	2 - medium 3 - coarse (	•	mai - soil m	etrix
osl - coarse s I - sandy loan I - fine sandy	n	sic - silly clay c - clay	1	xst - extremely stony		rse (20–76mm) ly coarse (>76mm)	ped - ped su por - soil po otr - other	
					Contrast  f - faint d - distinct p - promine	ot	-	

## <u> ố∭n</u> Jones & Stokes

Project/Site: Applicant/Owner:	LLNL Site 300	<u> </u>		<u></u>	State:	CA	<u>. 14 1   14 14 1</u> 5 15 16 1		
	US DOE		ana Karitani ta il		County:	Alameda	reconstructions		
Investigator(s):	Preston & Frazie				S/T/R			THE PARTY OF	7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Date:	07/03/02				1				
Do normal circumstance			Diver	□мо	Community ID:	Intermittent Str	eam Chann	el (spring fed)	<del>de la la cons</del>
is the site significantly di		ation)?	✓ YES	i wo	Transect ID:	5	:		
is the area a potential pr			☑ YES	□ NO	Plot ID:	58	7		
(If needed, explain bel			. <del> </del>				ù		
				······································				***************************************	
/EACTATION									
EGETATION		Die :	La pula	1 1 1	1 4			Let Dat Cont	Lance
Dominant Plant Specie	<u> </u>	Strata	% Rel. Cover	Indicator	Associate Plan		Strata	% Rel. Cover	indicate
Distichiis spicata		herb		FACW	Typha angust		herb	4	OBL
				<u> </u>	Carduus pycn		hedo		UPL
<u> </u>	<u>Linux, et lin</u>	1			Bromus diand	rus	herb		UPL
									degram in t
			L. J. Pare Island				1		
				ligi Hali ili					
	Transferance of			mut interfer de terradoual d		ania galaga ar Maria (1911) alia Seneralia galarga da manasisti	retini idilili. I Jeni idilili		
			daga parantah						
Percent of dominants th	nat are OBL_FACW_c	r FAC (exclu	idina FAC-1:		100%	Total vec	etation cove		%
							,	- <u> </u>	•
☐ Morpholog	ical Adaptations					Personal Knowle	dae of Regio	nal Plant Comm	ınitice
		olation-			i i			nari iani conini	III ( )
	cal/Reproductive Adap								
	servation of Plant Spe		in Areas of			Other (explain be	HOW}		
Prolon	ged inundation/Satura	ation							
Hydrophytic Vege	tation Present?		✓ YES	□ NO	:				
<u> </u>	<u> </u>	<u> 11 1</u>				ATT NEW PARTY OF THE PARTY OF T		Andreas Section	
HYDROLOGY									
s it the growing season?	YES	□ NO					_		
Based On:	Soil Temp (record)	• •			Wetland Hydroi	ogy Indicators:			
	Other (explain)								
				·	1	ators:			
Tomber langet.		Dave	50/		Primary Indic		tad		
Typical length:		Days	5% =		1	Inunda		Incha-	
		Days	5% =		1	Inunda	ted Upper 12	Inches	
	e below):	•	5% =		1	Inunda Satura Water	ted Upper 12 Marks	Inches	
	e below): Stream, Lake, or Ti	Ide Gauge	5% =		1	Inunda	ted Upper 12 Marks	Inches	
Recorded Data (describe	e below):	Ide Gauge	5% =		1	Inunda Satura Water Drift Li Sedime	ted Upper 12 Marks	Inches	
	e below): Stream, Lake, or Ti	Ide Gauge	5% =		1	Inunda Satura Water Drift Li	ted Upper 12 Marks nes		
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs	Ide Gauge	5% =		1	Inunda Satura Water Drift Li	ted Upper 12 Marks nes ent Deposits		
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other	Ide Gauge	5% =		Primary Indk	Inunda Satura Satura Water Driff Li Sedim	ted Upper 12 Marks nes ent Deposits ge Patterns in		
Field Observations:	e below): Stream, Lake, or Ti Aerial Photographs Other None Available	lde Gauge			Primary Indk	Inunda Satura Satura Unfit Li Sedim Draina	ted Upper 12 Marks nes ent Deposits ge Patterns in required):	n Wetlands	laches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available	Ide Gauge	inches		Primary Indk	Inunda Satura Satura Water Driff Li Sedim Draina dicators (2 or more	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe	n Wetlands eres in Upper 12	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit:	0 >15	inches inches		Primary Indk	Inunda Satura Water Drift Li Sedim Draina  dicators (2 or more	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav	n Wetlands eres in Upper 12 res	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available	Ide Gauge	inches		Primary Indk	Inunda Satura Water Drift Li Sedim Draina  dicators (2 or more Dxidize Water- Local 8	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey D	n Wetlands eres in Upper 12 res	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit:	0 >15	inches inches		Primary Indk	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Decutral Test	n Wetlands eres in Upper 12 res ata	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit:	0 >15	inches inches inches	(Z) vo	Primary Indk	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey D	n Wetlands eres in Upper 12 res ata	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit:	0 >15	inches inches	<b>⊘</b> NÔ	Primary Indk	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Decutral Test	n Wetlands eres in Upper 12 res ata	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit: aturated Soil:	0 >15 >15	inches inches inches	and the contract party risks in	Primary Indik	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Decutral Test	n Wetlands eres in Upper 12 res ata	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit:	0 >15 >15	inches inches inches	and the contract party risks in	Primary Indik	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Decutral Test	n Wetlands eres in Upper 12 res ata	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit: aturated Soil:	0 >15 >15	inches inches inches	and the contract party risks in	Primary Indik	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Decutral Test	n Wetlands eres in Upper 12 res ata	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit: aturated Soil:	0 >15 >15	inches inches inches	and the contract party risks in	Primary Indik	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Decutral Test	n Wetlands eres in Upper 12 res ata	Inches
Recorded Data (describe	e below): Stream, Lake, or Ti Aerial Photographs Other None Available surface Water: standing Water in Pit: aturated Soil:	0 >15 >15	inches inches inches	and the contract party risks in	Primary Indik	Inunda In	ted Upper 12 Marks nes ent Deposits ge Patterns in required): ed Rhizosphe Stained Leav Soil Survey Decutral Test	n Wetlands eres in Upper 12 res ata	Inches

SOILS						F	Plot ID:
Map Unit Name (	series and pha	ise): Diablo clay, 30	to 45% slopes	Drainage Class: well drained			
Taxonomy (subgroup): Ardic Haploxererts				Field observa	- tions confirm map;	☐YES ☑NO	
s data point locat	ed within a hw	tric inclusion?	☐ YES ☑ NO				
Profile Description	·=	and moreover	च्याकृत राज्यात (१८ <del>१५) ।</del> १९९६ । १९९				
<del></del>			Redoximorphic Features				
1			li i				
	Depth		Matrix Color	Abundance,		İ	
		exture Structure	(moist)	Size, Contrast	Type, location	Color (moist)	Other
A1	0-9	<u>c</u>	2.5Y 3/1	попе	<del>-</del>	<del> </del>	
A2/8k	9-15	<u> </u>	2.5Y 4/1-5/1	none		+	carbonates masses near bottom of horizon
				·   · · · · · · · ·			DORONI OI NONZON
Hydric Soil Indica	tors (check all	that apply):					
11.	His	tosol		☐ Mn or Fe	Concretions or No	selub	
, jian		tic Epipedon		☐ High Org	anic Content in Su	rface Layer of S	andy Solls
130	Sul	lfidic Odor	1 4 6 6 7 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Organic ₹	Streaking In Sandy	Soils	
renal		ulc Moisture Regime	14111111	2.00	National/Local Hy	dric Soils List	
		ducing Conditions ( $\alpha$		Other (ex	plain below)		
	· <u>—</u>	yed or Low-Chroma (<					
		trix Chroma <2 with Red	doximorphic Concentration		ons		
Hydric Solis P	resent?		✓ YES UNO				
Remarks:							
	•		11	1.1			
		and the state of the					
		er in 19 and		or orașeste leatrate on t. Albaniarean orașe	partitologicalet (Alt. 19 Bara 1 Amálogic tables (	and any accom	
		To a first of the Addition		a de la companya de l		hoverna, in the	
Real Police Science	ti i kale					e Kardini e jaki 111. Santara	
						. i filipigi . filozofi .di. azartzak	
WETLAND DET	ERMINATIO	N :					
Hydrophytic ve	getation prese	nt?	☑ YES ☐ NO				
Wetland hydrology present?			☐ YES ☑ NO				
Hydric soils present?				Is the sampling point within a wetland?			
Remarks:	- Seriel		YES NO	is the sample	ing point within a	Wouding	E1163 L110
Actions.		1.11.1	to the level	e pro la companya de la companya de la companya de la companya de la companya de la companya de la companya de	erin, e Newson er eren	and the second state of the second	okanina yanganin 18
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						n Pagatiti	
Profit grand		a Markan Hill					
		1.1.			- Helling in in I		克克斯 多姓 茅油縣
• .			:			and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t	
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engali i		<u></u>	<u> </u>	<u> </u>	ita ita ita ili ana		
	Tovers	nd Bock Erremant C	ontent		Dadaul	oroble Festive	Morphology
******	S GIDIXBI	nd Rock Fragment C	<del></del>			orphic Feature	: могрпоюду
Texture cos - coarse sand	udai.	- very fine sandy loam	Rock Fragments	Abundano f - few	<del></del>	Type Few airon o	oncentration (soft mass)
cos - coarse sano s - sand	V13)   - k		gr - gravelly vgr - very gravelly	c - commo	en .		nodule of concretion
fs - fine sand	sii -	silt loam	xgr - extremely gravelly	m - many			ganese concentration (soft mass)
vfs - very fine sand	Si • :		cb - cobbly	61		_	nganese nodule or concretion
icos - Ioamy coarse : Is - Ioamy sand		- sandy ciay loam clay loam	vcb - very cobbly xcb - extremely cobbly	Size 1 - fine (<2		_ d - depletior	1
rs - toarny sand Hs - toarny fine sand		· sitty clay loam	st - stony	2 - mediun	-	Location	<del></del>
lvfs - loamy very fine	sand sc -	sandy clay	vsi - very stony	3 - coarse	(5–20mm)	mat - soil m	
cosi - coarse sandy i si - sandy inam		- silty clay	xst - extremely slony		erse (20–76mm)	ped - ped st	
si - sandy loam fsi - fine sandy loam	C-0	ay		a - exirem	ely coarse (>76mm)	por - soil po otr - other	(ea)
				Contrast		_	
				f - faint			

p - prominent